

South African Medical Journal

Organ of the Medical Association of South Africa



S.-A. Tydskrif vir Geneeskunde

Vakblad van die Mediese Vereniging van Suid-Afrika

Incorporating the South African Medical Record and the Medical Journal of South Africa

REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

Vol. 25, No. 39

Cape Town, 29 September 1951

Weekly 2s

IN THIS ISSUE

Editorial: Van die Redaksie

Hospital Records

Hospitaalrekords

Original Articles

Incidence of Ear, Nose and Throat Diseases

Cranio-Cerebral Trauma

Studies on Pain

New Preparations and Appliances

Passing Events

Support your Own Agency Department (P. xxi)

Ondersteun u Eie Agentskap-Afdeling (Bl. xxi)

Professional Appointments (Pp. v, xxii)

★ *for Insomnia*

of nervous origin

due to pain or pyrexia



Trade mark
pat. 25-10-40
brand
Tablets: Containers of 25, 50 and 100

Trade mark
pat. 25-10-40
brand
Tablets: Containers of 25, 50 and 100

The standard booklet "Medication with M&B Barbiturates in General Practice" is available on request.

† Now manufactured in South Africa





COLLUMINA

COMPOUND TABLETS

An effective method of relieving the symptoms of hyperchlorhydria and peptic ulceration is provided by the use of Collumina Compound Tablets.

Each tablet contains:—

ALUMINIUM HYDROXIDE (Collumina Brand) gr. 5	(0.32 grm.)
PHENOBARBITONE gr. $\frac{1}{4}$	(0.016 grm.)
ATROPINE SULPHATE gr. 1/500	(0.13 mg.)

- 1 The aluminium hydroxide neutralises excess acid without producing an alkaline condition in the stomach.
- 2 Phenobarbitone will help to relieve the anxiety tension so often associated with hyperchlorhydria and peptic ulceration.
- 3 The small dosage of atropine sulphate will moderate excessive motor activity of the gastrointestinal tract.

PRESENTATION: Cartons of 24 and 100. Containers of 500.



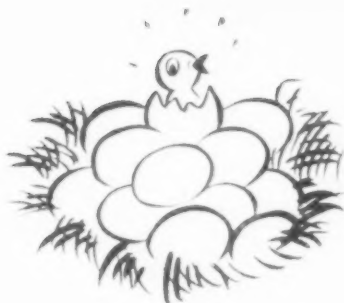
Further information on request

Distributed in South Africa by:

EVANS MEDICAL SUPPLIES

Sole Proprietors: E. S. L. & W. (South Africa) (Pty) Ltd., Johannesburg. Box 6607, Phone 33-1398.

Cape Enquiries: Box 282, Cape Town. Natal Enquiries: Box 1076, Durban.



How many?

of your patients are in need of

"B" COMPLEX THERAPY

PETERVITE

"B" TABLETS

Thiamine HCl 2.0 mgm.
Riboflavin 1.5 mgm.
Calc.
Pantothenate 2.5 mgm.
Pyridoxine
HCl 0.25 mgm.
Nicotinamide 20.0 mgm.

In a non-sugar-coated tablet.
20's, 60's, 100's.

PETERVITE

COMPOUND ELIXIR

Thiamine HCl 1.5 mgm.
Riboflavin 0.5 mgm.
Pyridoxine
HCl 0.25 mgm.
Nicotinamide 5.0 mgm.
Liver Extract
(concentrate) 15%.

In 1 FL OZ. ampoules of
pleasantly flavoured multi
bute. 4 oz., 16 oz., 50 oz.

PETERVITE "B" COMPOUND INJECTION

Each 2 c.c. ampoule contains—

Ascorbic HCl 10 mgm. Riboflavin 2 mgm.
Nicotinamide 100 mgm. Pyridoxine HCl 5 mgm.
Calcium Pantothenate 5 mgm.

Bottle of 6 = 2 c.c.

MADE FOR SOUTH AFRICAN REQUIREMENTS BY



Box 58, JORDEN TOWN

Established 1882

Box 5942, Johannesburg

ASPIRIN

is an acidic substance
sparingly soluble.

DISPRIN

is soluble, stable, substantially
neutral—and palatable.

The reasons for preferring calcium aspirin to aspirin lie chiefly in the fact that it is a neutral, soluble and bland compound, whereas aspirin is acidic, sparingly soluble and may act as a gastric irritant.

But calcium aspirin has a defect of its own—chemical instability, and as consequence, offering no manufacture it in the form of tablets that could be depended upon to remain free of noxious breakdown products under reasonable conditions of storage, have hitherto met with little success. These difficulties have now been overcome. Disprin, a stable, tablet preparation, readily dissolves to yield a palatable solution of calcium aspirin that can be prescribed in all conditions in which acetylsalicylate administration is indicated.



Extended clinical trials in Britain show that Disprin in massive dosage, even over long periods, can be tolerated without the development of gastric or systemic disturbances.

DISPRIN

SUBSTANTIALLY NEUTRAL
STABLE
SOLUBLE
PALATABLE

Made by the Manufacturers of "Disprin"

Disprin tablets and solution supplied on application.
Special Hospital work prices on application.

PACKETT & COEMAN (AFRICA) LTD., 101, BOX 907, CAPE TOWN

THE CHEMOTHERAPY OF TUBERCULOSIS WITH P.A.S.

'PASHETS'

A SHORT NAME FOR 'PARAMISAN' CACHETS

**the truly economical way to buy
and administer P.A.S.**

cheap, efficient and always true to standard. 'PASHETS' are a small part of the total cost of an article. The percentage of Paramisan (P.A.S.) in each of CACHETS has made a considerable improvement in the efficiency of administering P.A.S. CACHETS are moisture-proof, moisture-resistant and patient. There is no waste because they do not become damp, sticky or unusable. They provide an accurate dose without need for weighing.

Consider these further advantages:

ABSOLUTE FRESHNESS: 'PASHETS' are sealed in moisture-proof containers.

CERTAIN LIBERATION: 'PASHETS' dissolve rapidly in water, without need for chewing, thus ensuring rapid and certain liberation of P.A.S.

ACCEPTABLE TO PATIENT: 'PASHETS' are small, easy to swallow, leave no unpleasant taste and are pleasant to administer. These advantages maintain the acceptability of the treatment, thereby ensuring recovery and rehabilitation.

IDEAL FOR DOMICILIARY TREATMENT: 'PASHETS' are easy to dispense, convenient to carry, suitable and pleasant to take.

Without doubt an efficient and economical way to administer P.A.S. to patients and the staff. The truly economical way to buy and administer P.A.S.

'PARAMISAN' 'PASHETS'

CACHETS CONTAINING 1.5g. SODIUM para-AMINOSALICYLATE

MOISTURE-PROOF WRAPS OF 10 IN CONTAINERS OF 500 'PASHETS'



'PASHETS' & 'PARAMISAN' are the Trade Marks of

HERTS PHARMACEUTICALS LTD., WELWYN GARDEN CITY, ENGLAND

Further information from:

BRITISH CHEMICALS AND BIOLOGICALS S.A. (PTY.) LTD.,
259 Commissioner Street, JOHANNESBURG

GM73

P.O. Box 5788

South African Medical Journal

Suid-Afrikaanse Tydskrif vir Geneeskunde

Vol. 25 No. 59

Cape Town, 29 September 1951

Weekly 2s

CONTENTS

The Incidence of Diseases of the Ear, Nose and Throat: Survey of a Remote Native Reserve. Dr. P. S. Meyrick	A	701	Aspects of Cranio-Cerebral Trauma: 2. The Effect of Forces on the Skull and its Contents—Primary Injury: Intracranial Haemorrhage. Dr. D. A. Muskat	706
New Preparations and Appliances: Cortogen Acetate		704	Studies on Pain: III. Some Observations on Surgical Treatment in 65 Cases. Prof. J. F. P. Erasmus	711
Editorial: Hospital Records		705	Passing Events	715
van die Redaksie: Hospitaalrekords		705		

HEPVISC

FOR THE RELIEF OF
HYPERTENSION

HEPVISC is a New Hypotensive Agent combining Mannitol Hexanitrate (8mg.) with Viscum Album (50 mg.) in one tablet.

It effectively relieves Hypertension and controls subjective symptoms.

DOSAGE:

TWO TABLETS THREE OR FOUR
TIMES DAILY

Supplied in bottles of 50 tablets

Literature and Samples on request

PHARMACAL PRODUCTS (PTY.) LTD.
P.O. Box 784 • Port Elizabeth

Agents for

THE ANGLO-FRENCH DRUG CO. LTD.,
LONDON W.C.1

C 2305 MW

POST GRADUATE STUDY

For South African Practitioners

Are you preparing for any Medical,
Surgical or Dental Examination?

Send Coupon below for valuable publication

"GUIDE TO MEDICAL EXAMINATIONS" PRINCIPAL CONTENTS

The Examinations of the Qualifying Bodies.

The M.R.C.P. London and Edinburgh.

Diploma in Anaesthetics.

The Diploma in Tropical Medicine.

Diploma in Ophthalmology.

Diploma in Psychological Medicine.

Diploma in Child Health.

Diploma in Industrial Health.

Diploma in Laryngology.

The F.D.S. and all Dental

Examinations.

You can prepare for any of

these qualifications by

postal study in S. Africa

and come up to Great

Britain for exami-

nation. We spe-

cialize in Post-

graduate

tuition.

THE SECRETARY
MEDICAL
CORRESPONDENCE
COLLEGE

19 Welbeck Street,
London, W.1

Str., Please send me a copy of your
"Guide to Medical Examinations"
by return.

Name

Address

Examinations in which interested

South African Offices: P.O. BOX 2239, DURBAN, NATAL.

Required

Medical officer required for Gath's Mine (Asbestos), Mashaba, Southern Rhodesia, immediately. Salary £1,200 per annum, with free house and transport provided. Further particulars on application to Principal Medical Officer, Shabanie Mine, Shabanie, Southern Rhodesia.

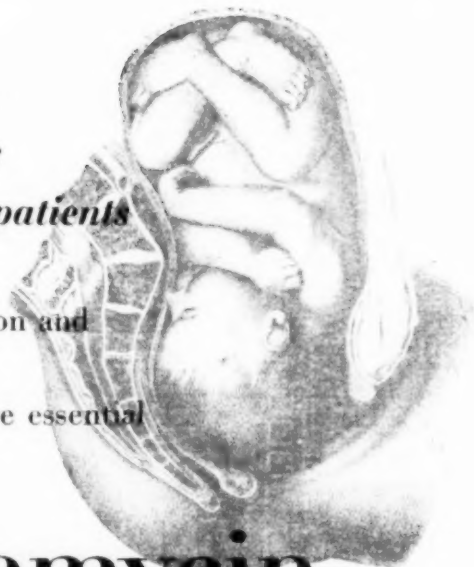
BRASS PLATES TO MEDICAL COUNCIL SPECIFICATION VICTOR C. GLAYSHER

165 BREE STREET
CAPE TOWN

PHONE
2-5111

*in the selection
of an antibiotic
for obstetrical patients*

rapid absorption and
broad tissue
distribution are essential



CRYSTALLINE
Terramycin
HYDROCHLORIDE

Rapid absorption and broad distribution following oral administration suggest the use of Terramycin as an effective aid in combating puerperal infection. Therapeutic serum and tissue levels are quickly achieved to control infectious processes which may complicate pregnancy or labor. In pyelitis of pregnancy, for example, patients respond "very promptly" to Terramycin with "a prompt drop in temperature, disappearance of pyuria and bacilluria and symptomatic relief."^{*}

^{*} Douglas, K. G. (Ed.), L. and Davis, L. F., *Gynaecology*, 73:4- (Jan., 1950).

Distributor:
Petersen Ltd.
P.O. Box 33
Capetown, South Africa

Terramycin is available as: *Capsules, Elixir, Oral Drops, Intravenous, Ophthalmic Ointment, Ophthalmic Solution, Ointment, and Troches.*

Export Department

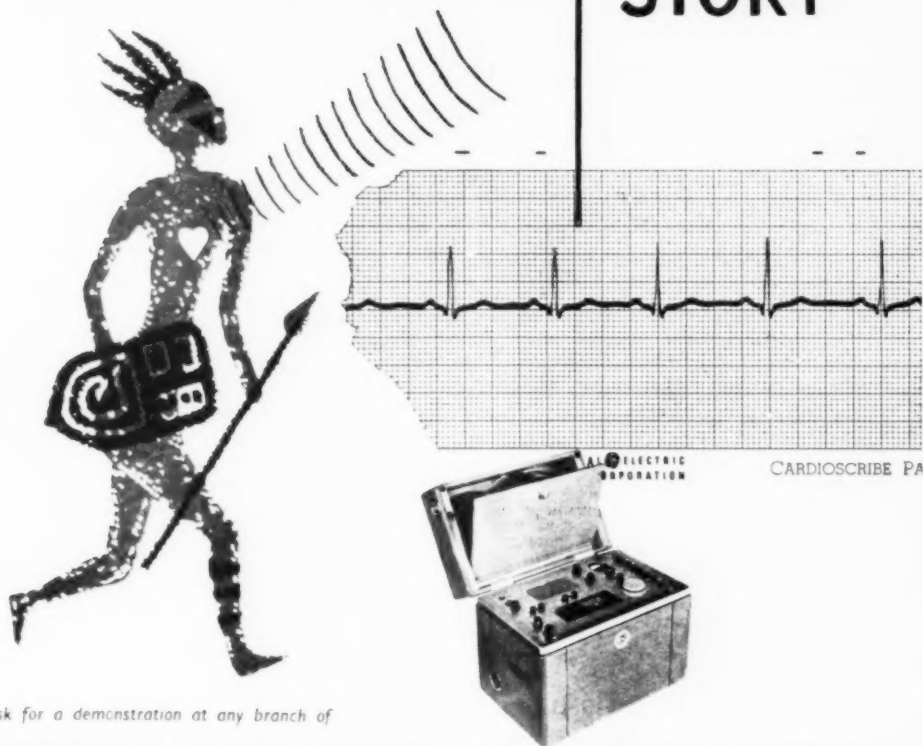


CHAS. PFIZER & CO., INC.
81 Maiden Lane, New York 38, N.Y.

IPT-JX 138

THE GENERAL ELECTRIC
Direct Writing
CARDIOSCRIBE
GRAPHICALLY RECORDS

THE
HEART'S
OWN
STORY



Ask for a demonstration at any branch of

GENERAL ELECTRIC MEDICAL PRODUCTS S.A. (PTY) LTD

JOHANNESBURG

DURBAN

CAPE TOWN

PORT ELIZABETH

P.O. Box 9361

P.O. Box 1830

P.O. Box 2317

P.O. Box 290

Telephone 23-7121

Telephone 20653

Telephone 3-0207

Telephone 2759

6445-1



No post-operative complications with 'KEMITHAL' SODIUM

TRADE MARK

Wherever an intravenous anaesthetic is indicated, 'Kemithal' Sodium can be used with advantage. Both for induction and for surgical anaesthesia of short or prolonged duration it has proved to be highly efficient and satisfactory, with the advantage of a relatively high therapeutic quotient.

Notable features of its use are minimal respiratory depression and a consistently good post-operative recovery, free from vomiting, restlessness and protracted depression. A number of workers have commented upon the reduced incidence of laryngeal spasm with 'Kemithal.'

'Kemithal' Sodium is issued in ampoules of 1 gramme and 2 grammes in boxes of 5 and 25, with or without sterile distilled water in ampoules of 10 c.c. and 20 c.c. respectively; ampoules of 5 grammes 'Kemithal' Sodium are also available in boxes of 5.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED

(A subsidiary company of Imperial Chemical Industries Ltd.)

WILMSLOW, MANCHESTER

Distributors:

ICI SOUTH AFRICA (PHARMACEUTICALS) LIMITED

P.O. Box 7796,

JOHANNESBURG



South African Medical Journal

Suid-Afrikaanse Tydskrif vir Geneeskunde

Vol. 25, No. 39

Cape Town, 29 September 1951

Weekly 2s

THE INCIDENCE OF DISEASES OF THE EAR, NOSE AND THROAT

A SURVEY OF A REMOTE NATIVE RESERVE

P. S. MEYRICK, M.B., B.S., D.L.O., R.C.P. & S., F.S.C.

Pietermaritzburg

A few years ago a Native reserve in the North-Eastern Transvaal was visited by an ophthalmologist with a view to determining the incidence of diseases of the eyes and of blindness in particular. The results of this survey were very illuminating and the incidence of eye diseases, particularly those preventable, was high.

A year ago the Chairman of the National Council for the Deaf, the Rev. A. W. Blaxall, suggested to me that a similar survey carried out from the point of view of diseases of the ear, nose and throat would be helpful to the Council in its future work for the non-European. The Rev. Blaxall thought it would be advisable to visit the same area as had been covered by the National Council for the Blind.

The area surveyed is known as Sekukuniland and lies in the North-Eastern Transvaal. Approximately halfway between Middelburg and Pietersburg is a place named Pokwani and here a road branches to the right to Lydenburg. About 15 miles along this road is the large Mission Hospital—the Jane Furse Memorial—of approximately 200 beds. About one-third of the area surveyed lies to the west of the Hospital and about two-thirds lies to the east.

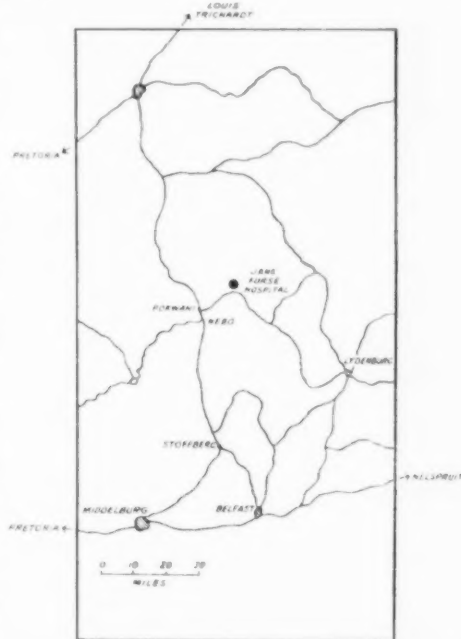
The area is very dry and vegetation is scanty, particularly in the area to the east of Jane Furse where the surface erosion was very marked. There is practically no vegetation except a few stunted trees and bushes. Water in the whole area was conspicuous by its absence. These remarks are made in respect of our visit which was in the middle of September.

Fourteen centres were visited, viz.:

Schabelleng, Mapots, Glen Cowie, Pokwani, Mohlaletse, Magalies, Marulabong, Madubong, Matlala, Sekwati, Sekwati School, Jane Furse School, Marishane and Magnet Heights.

The planning of the survey, from a medical point of view, was extremely difficult, as from the E.N.T. point of view it was the first of its kind. The great difficulty was the question of assessment of hearing. The assessment of visual acuity is a simple mathematical principle, but as regards hearing this is far from being so. A measurement of the degree of loss of hearing can only be arrived at with the use of the audiometer, an expensive and delicate instrument unsuitable for transport to the remote corners of the earth. Even with a pure tone audiometer there are many cases which are not resolved satisfactorily. The testing of a large number of cases requires a group audiometer and one of the Phylliden-Coyne type used with a phonetic word list approaches the ideal. This was imprac-

ticable as the number of these instruments in the country is very small (less than 10); in any case there was no source of electric power available and, what is more important, there is no phonetic word list for the Bapedi people.



After due consideration and consultation it was realized that it was quite impracticable to carry out a full satisfactory test of hearing. It was with reluctance that

this position was accepted, but it must be stressed at this point that the basic object of the survey was to assess gross pathology, and not to enter into an academic investigation of minor defects of hearing.

A Native Welfare Worker employed by the National Council for the Deaf was detailed to organize the attendance of the people at selected centres. A set of notes setting out the main symptoms of E.N.T. disease was prepared for the Welfare Worker's guidance.

The Jane Furse Hospital is large by Mission Hospital standards and much work has been necessary to bring it up to its excellent standards of efficiency.

A special form was designed for rapid recording. I felt that a remark about nutrition was essential in each case. The grades *Poor* (P), *Fair* (F) and *Good* (G) were used.

The ears were to be categorized as *Wax*, *Retracted*, *C.S.O.M.* and *Normal* (N). An entry under any heading means that the patient has at least one ear affected and possibly the other. The column *Wax* was included because a large number of cases was seen which showed gross amounts of wax frequently interfering with the hearing and represented an easily treated group.

Retracted is a term applied to those ears in which the drum has lost its sheen and translucency and there is undue prominence of the malleus and the malleolar folds. The retraction is due to repeated attacks of obstruction of the Eustachian tube. This is caused by enlarged adenoids.

C.S.O.M. stands for *Chronic Suppurative Otitis Media* and represents cases in which there is established infection of the middle ear manifested as a chronic discharge from the ear and persisting for many years and seriously interfering with hearing.

The nose was categorized as being *Normal* or *Abnormal*.

The mouth was similarly dealt with, but a column was added in which cases showing gross dental pathology were recorded.

The pharynx group contains a column headed *T's and A's*. This column represents those cases which, in my opinion, would materially benefit from having tonsils and adenoids removed. The other columns show *Normals* and *Abnormals*.

In due course we commenced work with the Rev. Blaxall acting as recorder.

We visited 14 areas. There appeared to be a general scarcity of water and vegetation was of the most scanty type. One kraal had a deep well but it became dry for two to three months of the year.

The kraals were generally very well built. The buildings were essentially square and on the whole were kept very clean and tidy.

Accommodation for our work was provided for us and varied from a table and chair under a tree in a field to the chief's sitting room. Usually we worked in the classroom of the tribal school and it was surprising to see on the blackboards the extent of the teaching which was in progress. In many places we were worried by the village maidens who found some E.N.T. disability overnight so as not to be left out. Food was not in evidence at any centre that we visited. Our times of visits varied from 9 a.m. to 5 p.m. and we wondered if the people ate anything at all. The absence of water throughout the whole area was very striking and one realized that this was the basic disability of the area. In many of the kraals all the water was transported in pots on the heads of the women from as far afield as seven miles. Without water crops will not grow and nutrition suffers. Personal hygiene becomes of the most primitive type. Clothing worn in the area conformed to the general pattern of Europeans. I was, of course, dirty and ragged in the extreme.

In all 699 persons were examined and our results have been classified (Table 1). Age groups were selected as follows:—

- (a) Pre-school Age 0-5 years.
- (b) School Age 6-15 years.
- (c) Early Working Age 16-25 years.
- (d) Mature Working Age 26-50 years.
- (e) After Working Age 50 years.

I had expected to see many cases of advanced disease, both malignant and non-malignant, and also syphilis. In all we noted the following list of serious pathology.

- (a) Completely deaf, 4 cases.
- (b) Syphilis (tertiary), 5 cases.
- (c) Severely deaf following injury, 1 case.

TABLE 1: TOTALS—AGE GROUPS

Age Group	No.	Nutrition			Ears				Nose		Mouth			Pharynx		
		P	F	G	Wax	Retracted	C.S.O.M.	Normal	Normal	Abnormal	Dental Abnormality	Abnormal	Normal	T's & A's	Abnormal	Normal
0-5	60	34	21	1	6	19	16	19	60	0	0	0	60	32	1	27
6-15	381	126	225	30	52	99	83	147	378	3	11	1	369	286	0	95
16-25	125	2	79	44	15	19	19	72	124	1	4	0	121	67	0	58
26-50	82	5	69	8	4	2	15	61	77	5	23	2	57	19	1	62
50+	51	0	50	1	3	5	6	37	48	3	27	0	24	2	0	49
Totals	699	167	448	84	80	146	139	334	687	12	65	3	631	406	2	191

(d) One case of a child aged 3½ who was considered to be completely deaf but showed signs of gross retraction of the drum and it was considered that this should be treated along routine lines before a definite opinion was given.

(e) A case of complete stenosis of the meatus following operation five years ago. Facial paralysis was present.

(f) A case seen with chronic cough and thought to be terminal stages of tuberculosis.

(g) A case of multiple neurofibromatosis of the molluscum fibrosum type.

(h) A case of gross destruction of the nasal bridge. The history was obscure but it did not appear to be syphilis.

(i) A case of rodent ulcer of the nares.

FINDINGS

(a) *Nutrition.* The younger groups showed a very large number of cases of poor nutrition and it seemed that those most affected by the lack of food were the children; many of these were literally on the starvation line. The nutrition of the adults, while not particularly good, was very much better than that of the children.

At the Glen Cowie Mission Station we examined two groups of children (Table 2).

i. Those resident at the Mission Station.

ii. Those resident in the surrounding Native kraals.

TABLE 2: ANALYSIS OF GLEN COWIE: COMPARISON OF NUTRITION OF CHILDREN AT MISSION

	No.	Nutrition			Ears				Nose		Mouth			Pharynx		
		P	F	G	Wax	Retracted	C.S.O.M.	Normal	Normal	Abnormal	Dental Abnormality	Pathological	Normal	T's & A's	Abnormal	Normal
Mission ..	41	2	13	26	2	16	1	21	40	1	5	0	36	26	0	15
Kraal ..	20	7	12	1	0	9	1	10	20	0	2	0	18	17	0	3

The difference in the nutritional assessment is most striking.

We only recorded 84 persons as having good nutrition in the whole survey—26 of these in good nutritional state were from the Glen Cowie Mission. The impression created by these children, who were obviously well fed and cared for, was extraordinary because of the appalling state which we found in all the other centres visited.

(b) *Hearing Loss and Ears.* Four cases were completely deaf and one of these has since been sent away to school. One of these was a girl of about 15 years and a discussion took place whether it was advisable to do anything about her. It was decided that no good purpose would be served by taking her out of her surroundings and giving her schooling. At present the girl was a unit in her family life and would always remain so and have someone to care for her whereas if she was taken away the time would come when she would be friendless. We felt that in the case of a boy it would be advisable to try to give him some education from a vocational point of view. There were many cases in which there was slight or intermittent hearing loss and which showed the characteristic change of retraction of the eardrums. All these cases should have tonsils and

adenoids removed. We saw many cases of gross quantities of wax in the ears and many complaining of deafness as a result. This represents a group of an easily treated abnormality.

The number of cases of running ears—chronic suppurative otitis media—was very high. We recorded 139 or, 20% of the total seen. Many of these cases showed bilateral disease.

(c) *Nose.* We were very surprised to learn that about 60% of the population (even children) is addicted to the taking of snuff. Snuff taking has always been associated in the author's mind with gross changes in the nose and polyp formation. In our survey we only saw 12 cases which could be classified as showing pathology of the nose. This figure is very low and at present it is difficult to account for it.

(d) *Mouth.* Only three cases showed any major degree of abnormality of the oral cavity. Several times we saw patients whose complaint was toothache and one was asked to pull out the offending tooth. We saw 65 cases which had gross dental pathology and the degree of gingival absorption was amazing. At least a dozen cases

had one or more molar teeth in which two roots were completely bare in the mouth, the third root holding the tooth in place.

(e) *Pharynx.* The absence of gross pathology was again striking in the pharynx. In my opinion there were 406 cases out of 699 which were examined (58%) which would materially benefit from tonsillectomy and adenoidectomy. This figure is high but includes all cases of ear trouble and the balance consists of those people who were subject to persistent and repeated attacks of sore throats.

COMMENTARY

Nutrition of the people was poor generally and very markedly so in the children. The high incidence of chronic discharging ears is directly associated with the nutritional state. The treatment of chronic discharging ears is very difficult and even the most experienced and skilled otologist has poor results unless operative procedure of the most modern type of endaural atticotomy can be performed. It becomes a physical impossibility to cope with such numbers of cases as we found in Sekukuniland. All that can be done here is symptomatic treatment; a few cases may have a chance to be treated radically.

The treatment of choice is prevention and much can be done in this direction by paying particular attention to the group of cases which suffers from attacks of intermittent deafness. These are undoubtedly in a pre-chronic stage.

It has long been established that chronic discharging ears is a disease of the slums—overcrowding, underfeeding, poor sanitary arrangements and exposure to weather because of inadequate clothing. These are the conditions that we found in the survey and, as was to be expected, we found a large number of chronic discharging ears. It is reasonable to suppose that similar figures will be obtained in any survey carried out in an area where the nutritional state is bad.

The absence of other gross pathology in the nose and throat was very striking and surprising. Sinusitis, allergic rhinitis and malignant disease of the nose and throat did not appear at all.

Many of the adolescent groups of youngsters appeared to be suffering seriously from repeated sore throats. The older people appeared to have much trouble with toothache.

RECOMMENDATIONS

It is not for a medical practitioner to make sweeping statements about such things as irrigation and water conservation schemes. In this particular area we venture to suggest that the Sekukuni mountains might be surveyed to ascertain the possibility of water conservation to give some degree of irrigation to this area. Without water there is no hope of improving the nutritional state of the people. In the absence of an improved nutritional state, much medical effort will be wasted in trying to treat conditions which are basically due to lack of food.

The presence of a Medical Unit of the size of the Jane Furse Hospital in the centre of this area could be put to considerable use in dealing with many of the conditions which have been noted in this report. It is probably impossible to approach the ideal—a full-time Ear, Nose and Throat Specialist at the Hospital. It is felt that much good work could be done by a Medical Officer who has

had partial training in the speciality and who could do tonsillectomies and adenoidectomies and deal with the early simple ear conditions. Such an appointment is considered urgent, for a start in the prophylactic work must be made to prevent the chronic disease of the ear becoming even more common.

There is no doubt that the services of a dentist would be a great help to these people and a mobile unit would be ideal from this point of view.

CONCLUSION

This survey represents a new adventure in the assessment of the work yet to be done in South Africa. One cannot say that if any individual case is not treated at once it will become totally deaf. Total loss of hearing as a result of disease at any stage in life is not common. Partial loss of hearing does not receive its correct amount of notice. It does not immediately arouse sympathy and consideration such as blindness does, but the result is the cutting off of the unfortunate individual quite effectively from the general medium of social intercourse. Who will trouble to talk to a hard-of-hearing man? Let it always be remembered that it is not only what one says that matters but how one says it.

SUMMARY

An account of a pilot survey of a remote Native reserve to ascertain the incidence of diseases of the ears, nose and throat is given.

Analysis of the statistics show a very high incidence of chronic discharging ears.

The nutritional state of the people is poor and there is a great general scarcity of water. Recommendations are made for improving the conditions of the people.

Tables of figures are attached.

I wish to express my thanks to the Rev. A. W. Blaxall for his untiring work in the field, to my colleague Dr. Lance Knox for helpful criticism of the original report, and to Dr. and Mrs. Downing for their hospitality and help at the Jane Furse Hospital.

I wish also to thank the National Council for the Deaf for permission to publish the report.

NEW PREPARATIONS AND APPLIANCES

CORTIGEN ACETATE

Description. Cortigen Acetate Ophthalmic Suspension is a suspension of Cortisone acetate (11-dehydro-17-hydroxy-corticosterone-21-acetate) in a buffered, isotonic, low surface tension aqueous vehicle specifically designed for use in certain eye conditions where a local but non-systemic action is desired. Each cubic centimeter of Cortigen Acetate Ophthalmic Suspension contains 5 mg. of Cortisone acetate. The particular size of the Cortisone acetate in Cortigen is less than five microns, thus eliminating any possible irritation which could occur from less minute crystals.

Action. Cortigen has the property of "blocking" the normal tissue response to infections, allergens and trauma. Although controlling the inflammatory phase of ophthalmic infections it should be remembered that the causative organism is not impaired and infection must be vigorously treated concomitantly with specific therapy.

Indications. Cortigen Acetate Ophthalmic Suspension can be used on the:

eyelid: Acute, chronic and allergic blepharitis, spastic entropion due to local irritation.

Conjunctiva: Acute, chronic, allergic, and phlyctenular conjunctivitis.

Cornea: Corneal ulcer, interstitial keratitis, keratitides, herpes zoster ophthalmicus, phlyctenular keratoconjunctivitis.

Sclera: Scleritis, episcleritis.

Iris: Acute, chronic, and trauma iritis.

Administration. Cortigen Acetate Ophthalmic Suspension is administered as follows:—One drop instilled into the eye every one to four hours as needed, depending upon the nature and severity of the disease being treated. Care should be taken not to discontinue therapy too early after the initial response.

How Supplied. Cortigen is available in dropper bottles each containing 3.75 cc. Schering Corporation, Bloomfield, N.J., U.S.A. Sole distributors: Scherag (Pty.) Limited, Johannesburg.

NAUSEA AND VOMITING IN PREGNANCY



Gynaecologists and Practitioners throughout South Africa report that HEXADOXIN is proving eminently satisfactory in combating Nausea and vomiting of Pregnancy.

HEXADOXIN TABLETS (Sugar-coated)

CONTAIN

Phenobarbitone 1 gr.

Pyridoxine 20 mgm.

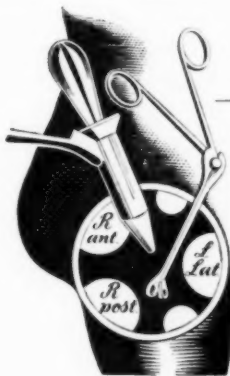
PACKING: Bottles of 20 tablets.

Suggested dosage: Two tablets three times daily for the first day and three tablets daily thereafter for four or five days.

A SOUTH AFRICAN PRODUCT MADE BY

SAPHAR LABORATORIES LTD.

P.O. BOX 256, JOHANNESBURG · CAPE REPRESENTATIVE: Mr. N. CHEVERS, P.O. BOX 568, CAPE TOWN
NATAL REPRESENTATIVE: Mr. K. F. ABLETT, P.O. BOX 2383, DURBAN
PORT ELIZABETH REPRESENTATIVE: Mr. J. V. VORSTER, P.O. BOX 789, PORT ELIZABETH

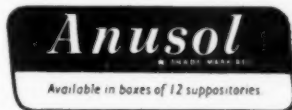


OPERATION PLAN

Strategic planning and tactical preparation in the theatre of war can obviate the need for the final operation. In the treatment of rectal diseases, especially chronic ones, surgical measures often seem inevitable; but before surgery can be undertaken the field of operation must be prepared. For this purpose Anusol® Haemorrhoidal Suppositories may be safely recommended. Their systematic use often effects results which at least postpone the need for surgery.

Anusol Suppositories, while preparing the field of operation, provide symptomatic relief of pain and discomfort. They have become intimately associated with the successful treatment of haemorrhoids, anal fissure, proctitis and inflammatory conditions of the anorectal region. No narcotic is contained in the suppositories to give a false sense of security.

Anusol is also available in Ointment form



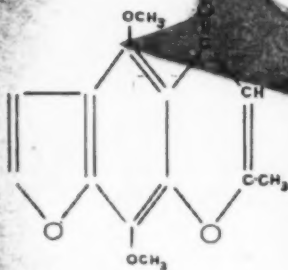
Available in boxes of 12 suppositories

WM. R. WARNER & CO. (PTY) LTD., 6-10 Searle Street, Capetown.

In the treatment of—
**ANGINA PECTORIS, BRONCHIAL ASTHMA,
 CORONARY THROMBOSIS, CHRONIC COR PULMONALE**

A highly purified form of KHELLIN, the active principle obtained from the seeds of the Eastern Mediterranean plant *Ammi visnaga* (LINN).

Benecardin
 REGD.



Produces a rapid yet prolonged action
 without lowering the blood pressure.

Literature on request to:

BRITISH CHEMICALS & BIOLOGICALS (S.A.) (PTY.) LIMITED

P.O. BOX 5788 259 COMMISSIONER STREET, JOHANNESBURG

South African Medical Journal

Suid-Afrikaanse Tydskrif vir Geneeskunde

EDITORIAL

HOSPITAL RECORDS

In a recent issue of this *Journal* (25 August 1951) we drew attention to the establishment of an International Statistical Centre, the necessity for which was recognized by the World Health Organization because of the problems bound to arise in applying the recently compiled *International Statistical Classification of Diseases, Injuries, and Causes of Death*.

This worthy venture will impose upon those medical practitioners, who are prepared to co-operate, a most excellent discipline as it will compel standardization of the description of disorder, disease and death.

The co-ordination of this programme on an international plane can only achieve success if it has the full support of medical professional groups throughout the world. That this support should be forthcoming is as obvious as it is essential.

It is more and more desirable that, in the interests of public health and clinical research, we should try to speak as uniformly as possible when recording the important data which form the basis of all medical statistics. This does not mean, of course, that the proposed *International Statistical Classification* is by any means in a rigid or final form. If the system is tried out by various countries, these will be in a strong position to put forward constructive suggestions so that eventually its validity may become universal.

The implications of this project are obviously very considerable for a country such as South Africa where the conditions of rural and urban practice are so dissimilar. Moreover, with the increasing extension and centralization of hospitals and medical services vast amounts of observational data are being gathered, the significance of which must be lost for all time unless these data are adequately classified and indexed.

Our multi-racial society is constantly carrying out important (often unplanned) experiments and if these data were available for analysis, they might conceivably produce important changes in clinical practice, in social policy and even in treatment. They would certainly help us to substitute established fact for unverifiable clinical impression, speculation and surmise.

The necessarily quantitative approach to an analysis of our problems depends not only on a precise classification, but also on the ready accessibility of the data. For this we must have proper methods of keeping hospital records which would incorporate an international system of classification and ensure adequate indexing and cross-indexing divorced from the patient's name or hospital number.

VAN DIE REDAKSIE

HOSPITAALREKORDS

In 'n onlangse uitgawe van die *Tydskrif* (25 Augustus 1951) het ons die aandag gevestig op die instelling van 'n Internasionale Statistiese Sentrum, die noodsaaklikheid waarvan erken geword is deur die Organisasie vir Wêreld-gesondheid, m.d.o op die vraagstukke wat seer sekerlik sal ontstaan by die toepassing van die *Internasionale Statistiese Klassifisering van Siektes, Beserings en Oorsake van Dood*.

Hierdie waardige doel sal 'n uitstekende tug uitoefen op daardie praktisyns wat gereed is om saam te werk, omdat dit die vasstelling sal afdwing van hoe 'n kwaal, siekte en sterfte moet beskryf word.

Die toepassing van hierdie gedragslyn op 'n internasionale voet, kan slegs dan suksesvol wees wanneer dit die volle ondersteuning geniet van die mediese professionele groepe dwarsdeur die wêreld. Die feit dat hierdie ondersteuning na vore sal moet kom is so duidelik soos dit onmisbaar is.

Dit word al hoe wensliker dat, terwille van die openbare gesondheid en kliniese navorsing, ons so eenstemmig soos moontlik moet probeer spreek, waar ons die belangrike gegewens neerskryf wat die basis vorm van alle mediese statistiek. Dit beteken egter nog nie dat die voorgestelde *Internasionale Klassifikasie* enigsins al in sy vaste of finale vorm is nie. Waar die sisteem getoets word in verskillende lande, sal hulle vaste gronde vind waarop opbouende voorstelle te maak, sodat uiteindelik die gangbaarheid daarvan algemeen mag word.

Dit is duidelik dat die invloed van hierdie ontwerp baie groot is vir 'n land soos Suid-Afrika, waarin die omstandighede tussen stedelike en plattelandse praktyk-uitoefening so verskillend is. Wat meer is, gepaardgaande met die sentralisasie van die hospitale en mediese dienste, word daar enorme hoeveelhede waargenome gegewens opgegaar, waarvan die waarde vir altyd verlore moet gaan, tensy hierdie gegewens op voldoende wyse gerangskik en registergewys opgeteken word.

Ons veelrassige samelewing voer gedurig waardevolle (meermaal onbeplande) eksperimente uit en indien hierdie gegewens vir ontleding beskikbaar kon wees, kon hulle denkbaar vernema wysiginge teweegbring in die kliniese praktyk, sosiale beleid en selfs ook in die metode van behandeling. Hulle sou sekerlik ook vir ons nuttig wees om onwaarneembare kliniese indrukke, spekulasies en gissing, deur vasgestelde feite te vervang.

Die noodsaaklik kwantitatiewe wyse van benadering ter analisering van ons vraagstukke, hang af, nie slegs van 'n noukeurige rangskikking nie, maar ook van die maklike bekikbaarheid van sulke gegewens. Hiervoor moet ons gepaste stelsels hê waarvolgens hospitaalrekords, wat ook 'n internasionale stelsel van rangskikking sou omvat en daarby ook 'n voldoende indeks- en kruisindexs-sisteem verseker, sonder die naam van die pasiënt en die hospitaalsnommer.

The time has come to employ personnel adequately and specially trained for this purpose, e.g. qualified librarians, if we are to impose order on the chaos which so often passes for a system of hospital records. This principle was fully endorsed by the recent Groote Schuur Hospital Committee Enquiry.

The classification of disease and death is pointless unless the data classified are available for useful inspection. The need to improve our hospital record systems should be pursued *pari passu* with the adoption of internationally recognized and standardized conventions. It could then become one of the corner-stones of the important developments taking place in the field of social medicine.

ASPECTS OF CRANIO-CEREBRAL TRAUMA

2. THE EFFECT OF FORCES ON THE SKULL AND ITS CONTENTS

PRIMARY INJURY: INTRACRANIAL HAEMORRHAGE*

DAVID A. MUSKAT, CH.M.

General Hospital, Johannesburg

Forces can cause injury—

1. By being applied to a non-fixed head, causing 'acceleration' effects;
2. By application to a fixed head, giving rise to a 'compression' effect;
3. By the moving head coming into contact with a stationary or more slowly moving object, i.e. causing injury by 'deceleration';
4. By the combined effects of the above; or

5. By blast or percussional injury (the latter, e.g. by a bullet striking the head tangentially). It is the application of force to the moving head which results in the greatest degree of cerebral damage, the rate of change of velocity being the most important factor (Denny-Brown and Russell, 1941). The resultant acceleration can be either linear or rotational, the skull and its contents, in the latter case, rotating around an axis either within or without the skull, e.g. the 'knock-out' blow. The important factor is the movement of the brain and not the distortion of the skull (as occurs in 'compressional' injuries). Where the skull has the least 'grip' on the brain, as at the vertex, sliding is greatest, resulting in either cerebral or vascular damage, affecting, in the latter instance, the cortical veins causing subarachnoid or subdural bleeding (Holbourn, 1943; Pudenz and Shelden, 1946). Owing to the radius of movement, certain tissues may be exposed to a greater degree of acceleration than others. Furthermore, differences in specific gravity and other physical characteristics of various anatomical portions of brain cause them to react differently when subjected to the same force. This stress may, apart from obvious damage, cause submicroscopical 'tearing apart' of particles of brain

tissue, physiological dysfunction and concussion (Holbourn, 1943).

Injury by Coup and Contre-coup. The various dural reflections and intracranial bony irregularities here assume great significance, as the impact of the soft moving brain against these rigid structures can result in great damage to the former. In clinical cases this must be borne in mind, as exploring only the site of obvious trauma may not reveal gross damage, which is actually present at the *contre-coup* site.

The *contre-coup* injury can be effected by a 'pulling away' of brain from skull, by the flinging of the brain against the skull and its prominences, by deformation of the skull or, and probably in most cases, by rotational movements of cerebral masses (Holbourn). Cerebrospinal fluid cushioning is important—where it is least at the tips of the frontal and temporal lobes, *contre-coup* injury is greatest, though the anatomical configuration of the base of the skull is the more important factor. *Contre-coup* lesions are extremely common in fatal head injuries and, in the majority of cases, more severe than the *coup* injury.

Injuries of the Skull. The cerebral manifestations of head injuries are the essential events and the bony injury (excluding compound fractures) of secondary importance. However, though a fracture *per se* may be a minor trauma and of very little prognostic import, when death results from a head injury, a fracture is present in the vast majority of cases. The skull can be injured in the following ways:

1. By a force of sufficient momentum applied to

(a) A circumscribed area of bone giving rise to a local deformation of the skull structure, e.g. a blow by a blunt object. Owing to the sharply localized nature of the impact, the overlying skin may be split by the force, compounding the injury;

(b) A large area of skull, e.g. a dive or fall on the head. There may be an associated cervical spine injury.

* The References will be published at the end of the concluding paper in this series.

2. By forces tending to split the skull, e.g. that inflicted by an axe, or by blunt forces applied at the level of the base of the skull (Rawling, 1912).

3. By local percussive violence (Dott *et al.*, 1944), e.g. a bullet striking the skull tangentially. In the 'fractured base' it is, of course, the soft tissue damage that is important, and the internal compounding that not infrequently results. It is indicative of the violence of the force, causing serious brain injury, subarachnoid and often diffuse basal subdural haemorrhage.

Brain Injury. The brain, subjected to stresses and strains, reacts by failure in inherent elasticity, and consequently 'cracks' or 'tears' (Holbourn, 1944). The energy of a force, however, particularly when localized, can be expended in fracturing the skull only and cause little or no brain injury, and may even fail to produce unconsciousness.

The primary injury to the brain can be either concussion, contusion or laceration, or a variable combination of these (Rowbotham, 1949). As the vessels can be damaged with minimal brain trauma, their injury must be included in the 'primary' phase, although the effects of such injury may only manifest themselves secondarily. Each of these primary effects may prove fatal, or the patient may recover from their immediate consequences, only to succumb later to the 'secondary manifestations', such as haemorrhage, oedema, hydrocephalus, herniations or infections.

The important factors in any given case of cranio-cerebral trauma are the location and severity of the brain injury (Voris, 1945). It is extremely difficult, if not impossible, to estimate the degree and extent of the primary injury when the patient is first seen, and it is a very courageous (or foolish) surgeon who can say, despite all our modern aids to diagnosis, that this or that is the injury to the brain when the patient is still in the primary, or even secondary phase. Hence the increasing popularity of making 'peep-holes' in the skull.

Concussion. By this is meant some disturbance of the state of consciousness, consequent upon the application of force to the head. Physical, physiological and cytopathological changes have been incriminated, chief of which are: Sudden anaemia of the brain (Kocher, Cushing, Trotter), vasoparalysis and its sequelae (Scheinker), stretching of nerve fibres and paralysis of interneuron systems (Greenfield), cellular disturbance—*commotio cerebri* (Bell, Dandy, Holbourn), physical condensation of nervous tissue, causing traumatic neuronal paralysis (Denny-Brown and Russell), changes in electrical potential (Ferguson and Liversedge), traumatic discharge of the polarized cell membranes (Walker *et al.*), disturbance in synaptic transmission (Denny-Brown), brain-stem and hypothalamic lesions (Jefferson, Brain).

It is important that the theory should fit the facts, viz., that the changes in concussion must be (1) completely reversible and (2) causative of death, either instantaneous or delayed for hours or even days, when detailed examination fails to reveal any microscopical or macroscopical evidence of brain injury. Ultramicroscopy will probably eventually reveal the answer, which may, however, prove to be related to changes in electrical potential.

When the rare event of sudden death does not occur, there is, immediately after the injury, a maximal degree of disordered consciousness which becomes progressively less (Bagley, 1929). The lowest vegetative functions are

first destroyed, followed by a gradual return to successive levels of cerebral function. Whether momentary or prolonged, the concussion passes through the following phases (Symonds, 1949):

1. A complete paralysis of cerebral function, involving even the vital centres controlling respiration and circulation.
2. Coma, lasting seconds, minutes or hours.
3. Re-appearance of reflexes and movements.
4. Confusion and post-traumatic amnesia, the latter sometimes preceded by automatism. 'Seeing stars', a boxer momentarily dropped, the knock-out blow, prolonged coma and even death—these are all gradations of the same physico-pathological process.

Contusion. 'Microscopical solution of continuity of brain tissue' (Rowbotham, 1949) can manifest itself as a pin-point area of haemorrhage, i.e. petechial, as an aggregation of these or as a smaller or larger area of localized or diffuse bruising of cerebral tissue. The frontal lobes, lying in the anterior fossae, and the sphenotemporal lobes abutting on the sphenoid ridge, are preponderantly involved, particularly at the tips of their poles and on their inferior surfaces. The lesions in the brain can occur anywhere, but more commonly in the cortex, the junction of the white and grey matter being particularly susceptible, the centrum ovale, lenticular nuclei, corpus callosum, pons, midbrain, medulla and, rarely, the cerebellar hemispheres. The more cellular, vascular cortex tends to suffer more than the subcortex. Contusion can occasionally occur without concussion, but the latter cannot and, we feel, must not, in closed injuries, be dissociated when there is contusion or laceration, which are merely grosser manifestations of the effect of forces on the brain.

Laceration. Gross, macroscopically visible tearing of brain tissue can be either a *coup* injury underlying a compound fracture, or *contre-coup* in cases of severe violence. The more extensive trauma causes tearing of vessels so that widespread intracerebral and subarachnoid haemorrhage almost invariably accompanies the brain injury.

INTRACRANIAL HAEMORRHAGE

Vascular damage in acute trauma is rarely present by itself, so it is well to remember that extradural or subdural haemorrhage is practically invariably accompanied by contusion or laceration to a major or minor degree; hence subarachnoid bleeding is almost always associated. These concomitant brain injuries often play a major role in the death of the patient. A discussion of the haemorrhagic lesions of cerebro-cranial injury is usefully considered under the following headings:

1. Petechial.
2. Subarachnoid.
3. Intracerebral.
4. Intraventricular.
5. Subdural.
- (a) Acute;
- (b) Subacute;
- (c) Chronic;
- (d) Hygroma (for convenience).
6. Extra-dural.
7. Delayed apoplexy.

Petechial Haemorrhages. Pathologically their presence can be detected by the inability to wipe the small *puncta cruenta* off the cut surface of the brain. No longer regarded as the basic pathology of concussion, the two conditions undoubtedly may be associated, both being direct effects of the same mechanism. Common in fatal cases, they may occur either singly (rare), diffusely or in

multiple aggregations (Fig. 1). They are usually seen surrounding or adjacent to contusions and lacerations and are more numerous in the cortex, particularly at the junction with the white substance, but are rarely confined to the grey matter only. They frequently occur wherever there are differences in the specific gravity of tissues or fluids and, in a considerable number of fatal cases, in the brain-stem, either primarily or secondary to pressure effects from supratentorial herniations. They probably arise from rupture of small vessels into the perivascular spaces and thrombosis in the distal segment, with resultant diapedesis (Denny-Brown and Russell, Greenfield, Fedeschi), or, as more recently suggested, vasoparalysis of small vessels, stasis, anoxia and diapedesis (Scheinker, 1944). If the haemorrhage is large it is liable to break through into the surrounding parenchyma and result in the interruption of nerve fibres (Rand and Courville, 1934) and be a cause of post-traumatic pathological states. When limited to the perivascular spaces, they are probably completely absorbed, but, when the parenchyma is involved, changes occur in the nature of organization, resulting in impaired cerebral function, called 'traumatic encephalopathy', considered to be the basis of the condition known as 'punch drunk' (Martland, 1928).

Subarachnoid Haemorrhage. The significance of blood in the cerebrospinal fluid must be estimated by:

1. Its indication (in the majority of cases) of trauma to the cerebral substance;
2. Its role in acting as a form of expanding lesion;
3. Its irritant effects;
4. Its association with other forms of intracranial damage.

Rarely haemorrhage may be of a primary type due to shear strain between the brain and the pia-arachnoid. Sudden displacement of cerebrospinal fluid to the side opposite the site of impact may cause tearing of trabeculations and a *contre-coup* subarachnoid haemorrhage (Russell, 1932). The escaping blood becomes uniformly mixed with the cerebrospinal fluid. It is usually claimed that the blood does not clot, unless in very profuse quantities (Rowbotham, 1949). Ody (1932), Morkel (quoted by Moritz, 1942), Scarff (1945), Gurdjian (1933) and others, contrarily, claim that blood does clot, particularly when in considerable amounts. Gravitation in the posterior fossae, with haematoma formation, may induce a chronic leptomeningitis in the region of the fourth ventricle, to be followed later by the development of an internal hydrocephalus (Morkel, 1942). Intracisternal haemorrhage may cause death by giving rise to an acute hydrocephalus of the communicating type (Scarff, 1945). Fresh blood, according to Bucy (1943), commonly gives little in the way of symptoms unless present in large quantities. After 24 hours, or even earlier, however, the red cells begin to break down with a discharge of their haemoglobin and breaking-down proteins into the fluid. It is this material that is irritant and gives all the signs and symptoms of a sterile meningitis. The amount of bleeding is important: fractures of the base of the skull owe a considerable part of their gravity to the large amount of subarachnoid bleeding that may occur.

Intracerebral Haemorrhage. This form of bleeding has been variously estimated to occur in 2.5% of an operative series (Gurdjian and Webster, 1948) to 8% of cranio-cerebral trauma (Courville, 1945). It may be primary,

usually in the centrum ovale, or it may be secondary and part of a large contusion. It may develop immediately, or hours or even days after the injury (*vide infra*), giving the 'interval syndrome'. These haemorrhages, when large, are found, according to Courville and Blomquist, 1940:

1. Immediately beneath a depressed fracture of the skull, with or without meningeal or overlying cortical contusion or laceration;
2. Adjacent to, or extending inwards from, an area of contusion or laceration of the cortex (Fig. 1);
3. Within the centrum of a lobe without any evidence of cortical surface damage (Fig. 2).

Subcortical haematoma may result from a severe or a mild blow and are usually single, but may rarely be multiple. They may occur alone or in association with a subdural or extradural haematoma and, in fact, clinically it may be impossible to differentiate them from these two latter conditions. The haematoma occurs in the young as well as the old and arteriosclerosis plays no important part in its production, though it may have a predisposing influence (Jewesbury, 1947; Courville, 1945). In about 90% of cases it occurs in the temporo-parietal lobe (Scarff, 1945). The source of the bleeding may be arterial, when the outcome is invariably fatal; or venous, when it is more likely to form a circumscribed haematoma, producing a space-occupying and expanding lesion of the brain substance. Rarely the haematoma may involve the lenticulo-striate system or rupture into the ventricles or the subarachnoid space. The content may be fluid or clotted blood, later becoming chocolate-brown or yellowish. Peri-haematoma softening is quite characteristic, increasing the cerebral deficit and militating against successful recovery after drainage.

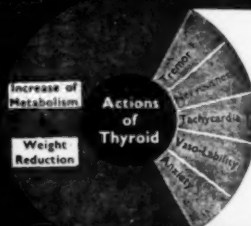
Intraventricular Haemorrhage. This may result from choroid plexus injury or, more frequently, from rupture of an intracerebral haematoma into a lateral ventricle. The blood in these cases is clotted and there is no record of any case surviving such a catastrophe.

Subdural Haematoma. Forces of acceleration and deceleration are the chief factors in their production. When applied in the antero-posterior, or postero-anterior directions, a gliding movement of the relatively unfixed convolutions of the cerebral hemispheres occurs and, as a result, the delicate bridging superior cerebral veins are acutely stretched and tear. Inherent weakness of the veins may be associated, since the trauma is very often of a mild nature. When the blow strikes the side of the head the bleeding is often contra-lateral, a fact of considerable clinical importance. Occasionally haemorrhage may occur from a middle meningeal artery, or a tear of a dural sinus, particularly when basal, often accompanying fracture in this region.

Subdural haematoma are most frequently met with at the extremes of life, the first two years and the sixth decade giving the greatest incidence (Peet, 1949). In the infant, damage to the sagittal sinus, from the over-riding of bones, is a frequent cause and, if it survives, a chronic haematoma develops. In the aged, atrophic changes result in increased mobility of the brain (Moritz, 1943) and the elongated, less tortuous bridging veins are more vulnerable to injury. The usual site of occurrence is in the fronto-parieto-temporal region. Bilaterality is a

APONDON

for Safe weight reduction



These ill-effects
do not arise with
APONDON
by reason of its
unique composition

by pharmacologically detoxified Thyroid

BASE

Standardised THYROID, our choline derivative PACYL, pure ERGOT alkaloids. PACYL and ERGOT synergetically suppress the undesirable non-metabolic thyroid influence.

INDICATIONS

Obesity, myxoedema and allied endocrine dysfunctions.

During 2 years of observation Apondon was used in 60 cases of obesity resulting from endocrine disturbances, in some cases coupled with overfeeding. The results were most favourable, and showed the superiority of Apondon to ordinary thyroid preparations.

G. STOETTER, Med. Clin. 1936/30.

Supplied in bottles of 25 and 500 pills.

VERITAS DRUG COMPANY LIMITED
LONDON AND SHREWSBURY - ENGLAND

For further information and samples apply to our Distributors
in South Africa:

LENNON LIMITED • P.O. Box 8389 • JOHANNESBURG



The sovereign treatment of essential,
climacteric or arteriosclerotic

HYPERTENSION

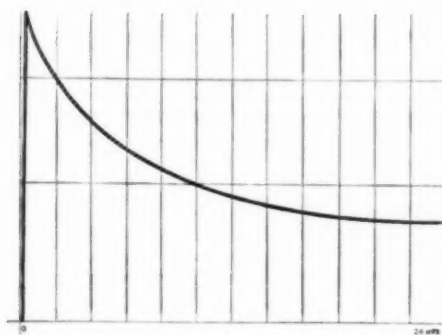
and its concomitant symptoms

*For high initial
and sustained blood levels . . .*

Crysticillin Fortified

Squibb Procaine Penicillin G for Aqueous Injection, 300,000 units, with Buffered Penicillin G Potassium, 100,000 units

- * Easy to prepare and inject
- * Safe and painless
- * Very high initial blood level
- * Sustained action—effective level maintained around the clock with one injection per day



Vials of 400,000 units (1 dose)
2,000,000 units (5 doses)

Crysticillin Fortified is a registered trademark of Squibb & Sons, Inc. New York, N.Y.

SQUIBB A LEADER IN PENICILLIN RESEARCH AND MANUFACTURE

Further Information and Literature is available from:

Protea Pharmaceuticals Limited

P.O. Box 7793

Johannesburg

Telephone 33-2211



• **ASTHMA**
• **BRONCHITIS**
• **EMPHYSEMA**

are rapidly relieved by the

Bronchovydin

**INHALATION
THERAPY**



DRITAX HAND INHALER

BRONCHOVYDRIN is a specially balanced Adrenaline technique obviating parenteral injections and free of any secondary effects, yet affording dramatic relief of all forms of bronchospasm, whether physical, nervous or allergic.

Available with or
without a Face Mask

RIDDELL

Available in cartoned bottles of 12.5 gm.

Inhalers

SUPER PAG is a large table model and can be supplied with single or double bulb, also with bakelite stand.



SUPER PAG HAND INHALER

PNEUMOSTAT ELECTRIC INHALER is suitable for AC-DC of 90-110 volts or 200-250 volts, and is supplied complete with two **SUPER PAG** Inhalers either of which is brought into use by a two-way tap.

RIDDELL INHALERS deliver a fine degree of dry atomisation in the region of 20 microns, which is absorbed by the alveoli with extreme rapidity affording relief to an **ASTHMA** attack within the matter of seconds and yet is very easily administered by the patient without inconvenience.

Please write for technical data.



PNEUMOSTAT ELECTRIC INHALER

Sole
Manufacturers

RIDDELL PRODUCTS LIMITED

**LONDON
W.I.**

AXTELL HOUSE, WARWICK STREET

South African Representatives: **FASSETT & JOHNSON LTD.**, 72 SMITH STREET, DURBAN. Phone: 2-9521

Duracillin Fortified

*(Procaine Penicillin -G and Penicillin -G Crystalline-Sodium
Lilly), BUFFERED, FOR AQUEOUS INJECTION*

■ Penicillin is bacteriostatic in threshold concentrations and bactericidal in higher concentrations. Approximately 60 per cent of parenterally administered penicillin is excreted in the urine. Clinicians agree that in treating infections it is good practice to employ concentrations far in excess of those actually needed. This is one reason why physicians prefer 'Duracillin Fortified,' Buffered, for Aqueous Injection.

ELI LILLY INTERNATIONAL CORPORATION
Indianapolis 6, Indiana, U.S.A.



Fig. 1. Confluent central petechial haemorrhages forming, on the right, a haematomatous collection.

Fig. 2. Intracerebral Haematoma. (a) Haematoma; (b) Longitudinal fissure displaced to opposite side; (c) Compression of lateral ventricle.

Fig. 3. Combined extradural and subdural haematomata. (a) Extradural; (b) Subdural; (c) Dura mater intervening. Compression of brain well shown.

frequent finding, though large subdural haematomata are more often unilateral (Gurdjian *et al.*, 1943).

The Acute Type. A certain amount of subdural bleeding is a frequent finding in patients dying of head injury, but this must be distinguished from the larger space-occupying lesion under consideration. In the majority of cases the haematoma is what one might call a secondary type, usually associated with severe brain trauma. Sub-arachnoid bleeding is a common concomitant effect. The patients are usually gravely ill and, more often than not, unconscious, due to the associated intrinsic injury. Exploration may reveal a layer of dark venous fluid or clotted blood, diffusely spread over the underlying hemispheres. Not infrequently the pia-arachnoid is torn, when there will be a leakage of cerebrospinal fluid into the subdural space, mixing intimately with the blood and preventing clotting of the latter. Voris (1946) states that in these cases the fluid will be re-absorbed. Otherwise, if the patient survives, it remains to form a chronic haematoma. Survival after massive acute subdural haematomata of the secondary type is unusual, even after adequate drainage, the primary injury being the chief cause of death. With less intensive

cerebral injury, these haematomata can give a typical 'interval syndrome'. Fig. 3 shows such a haematoma in association with an extradural haematoma.

The primary acute subdural haematoma is that which usually goes on to form the chronic type. From the history of the latter it seems that injuries of a more trivial nature, frequently completely forgotten by the patient, are causative. Blood escapes from the veins into the subdural space but, as the intravenous pressure here is very low, the leakage is slow and possibly intermittent, being influenced by factors tending to increase the intracranial venous pressure,

the margins of the haematoma, leaving a fairly fluid centre. There is marked dural fibroplasia, but that of the arachnoid is minimal, though occurring rapidly. Organization tends to encapsulate rather than replace the haematoma. Meanwhile, in the latter the red cells are breaking up, the resulting and other proteins in turn splitting into smaller molecules, thereby markedly increasing the osmotic pressure of the haematoma fluid. In the early stages the wall of the clot is shaggy and the contents dark red, brown or even yellowish in colour from the liberation of bile pigments.

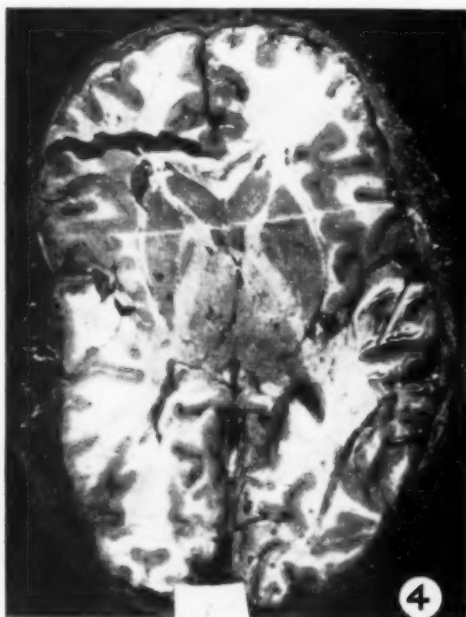


Fig. 4. Extradural haematoma in a child aged 12. There was evidence of commencing organization. The child died at home eight days after injury.

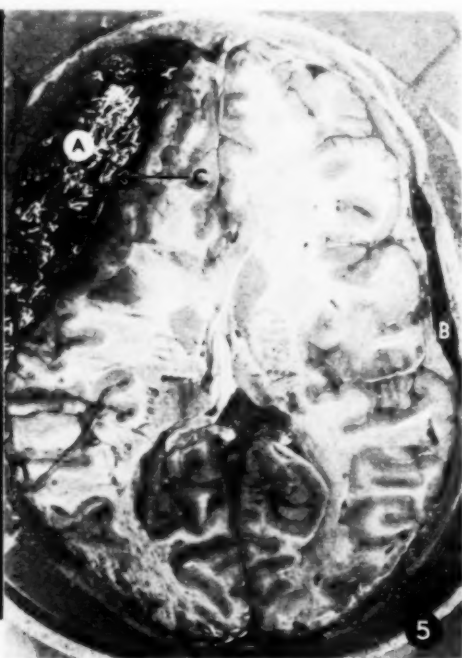


Fig. 5. Extradural haematoma due to laceration of the sagittal sinus. Upper half of a horizontal section through the skull demonstrating typical compression effects. The haematoma (a) became continuous with (b) under the vertex of the skull. (a) Dura mater.

such as coughing, straining, etc. Cerebral trauma being absent or minimal, operative treatment should theoretically be uniformly successful—if the condition is recognized. Acute subdural haematomata are a frequent finding in deaths of the newborn and infants, even with spontaneous delivery (Brouwer, 1949), often associated with partial or complete atelectasis of the lungs. Additional factors playing an important role in the development of these haemorrhages are malnutrition, avitaminosis (C and K), various types of blood dyscrasias and intracranial infections.

The Subacute Type. Owing to the relatively low pressure in the ruptured veins, coagulation-sealing soon occurs, leaving a collection of fluid and clot. Reactive changes occur in the surrounding meninges. During the phase of clotting, fibrin is deposited and tends to settle at

The Chronic Type. Unrecognized, this lesion is a not infrequent cause of morbidity, psychopathic disturbances and death. Fortunately, however, the medical profession is becoming increasingly aware of its frequency and relative ease of diagnosis, when suspected. After about two weeks the haematoma may be said to enter its chronic phase. The lesion usually extends from the posterior part of the parietal lobe to the frontal pole, and from the sagittal sinus to the floor of the skull. Although more often unilateral, it occurs sufficiently often bilaterally (20-25%, Oldberg, 1945) to warrant exploration on both sides. It may be solid (rarely) or partially solid and fluid, but it far more commonly breaks down evolving a fluid of increasing osmotic pressure, with a resulting tendency to increase in size, this enlargement occurring up to three

months in the mixed type and for longer in the fluid variety. Bleeding capillaries may add to the content, but it is now commonly accepted that enlargement is effected by the osmotic process, the thin inner neo-membrane and arachnoid together acting as a semipermeable membrane. The fluid may be watery, brown or various shades of black. Diffuse haematomata may become localized to form cavities of various dimensions. The outer, densely adherent membrane may attain considerable thickness, but the inner layer remains pellicle-like, adhering mainly to the cortical and subdural veins—a source of severe haemorrhage if attempts are made at operative removal. Rarely, calcification or even ossification occurs.

Subdural Hygroma. This may conveniently be listed here. The acute form develops immediately after the injury. It is assumed that a rupture of the delicate arachnoidal membrane occurs in such a way that the opening behaves in the manner of a ball valve, allowing cerebrospinal fluid in the subarachnoid space, augmented perhaps by the associated oedema, and 'pumped' by such intermittent actions as coughing, straining, etc., to flow into the subdural space without allowing egress. Its subsequent behaviour mimics subdural haematoma closely, except that both neo-membranes are of the same pellicle-like structure. The contents are always fluid, usually clear or colourless, but often xanthochromic or tinged with blood. It may closely simulate extradural haematoma in the adult and hydrocephalus in the infant.

The *subdural aerocoele* may follow fracture of the frontal sinuses (Cairns, 1937), owing to the close adhesion of the dura.

Extradural haematoma is predominantly a lesion of the male sex, the ages between 20 and 50 giving the highest incidence, though recently Campbell and Cohen (1951) describe an incidence of 1.8% in children under the age of 12. It complicates severe craniocerebral injury in 2-5% of cases (King, 1943; Munro and Maltby, 1941). The *middle meningeal artery* is generally considered to be the most frequent source of bleeding. Arterial blood pressure has to overcome the firm resistance of the adherent dura, but once this is accomplished the stage is set for a vicious expanding lesion. There is, as it were, an increasing leverage tending to dissect the dura off the skull, increasing impetus being given by the accession of haemorrhages from the tearing of minute dural tributaries (Fig. 4). The *meningeal veins*, however, can themselves produce an expanding lesion. Rupture of both artery and vein will give bleeding from both ends with accentuation of effect. The great frequency of fracture of the skull crossing the middle meningeal grooves makes it almost

obligatory to radiograph those patients in whom the diagnosis of an extradural haematoma is being considered, the site of bleeding being almost invariably related to the coup injury. *Bleeding from the dural sinuses*, however, can occur in the absence of such fractures, although a depressed spicule of bone may penetrate the wall of the sinus. The momentary deformation of the skull at the time of impact can cause shear strain and laceration of the sinus without a fracture. Difficult labour and mal-application of forceps can cause similar injuries. The low intravenous pressure has a remarkable ability to dissect the dura off the skull, particularly over the vault anteriorly (Fig. 5). *Diploic venous haemorrhage* accompanying fracture usually results in a small or moderately-sized haematoma, though larger collections may form, sufficient to turn the balance against recovery if not evacuated in time.

The discoid haematoma in all the above cases spreads evenly in all directions, having its maximal thickness in the centre. Extradural cerebellar haematomata, though rare, have been described (Turnbull, 1944; Anderson, 1949), and the writer has seen a particularly large one. Basal haematomata are also encountered, and offer a problem in diagnosis, air studies probably always being essential. Extradural haemorrhages almost always occur on the side of the trauma and preponderantly in relation to an overlying fracture. In contradistinction to the subdural type, it is rarely bilateral, and then only when the trauma is bilateral or with the rare occurrence of extradural haemorrhage without fracture (estimated to occur in 1% of cases), or with sinus injuries. The size of the clot is not necessarily proportional to the severity of the symptoms, a small clot often proving lethal sooner than larger collections (Gurdjian and Webster, 1948). Concomitant injuries, always associated, influence the prognosis greatly. Except possibly in infants (Campbell and Cohen, 1951) there is a uniformly fatal termination unless operative treatment is instituted early. Extradural haematoma is a cause of death of between 12-18% of cases dying of head injury (Vance, 1927), and even with operation has a mortality, in adults, of about 50%.

'*Delayed apoplexy*' (Bollinger, 1891; Courville and Blomquist, 1940; Jewesbury, 1947) is believed to be a sudden intracranial haemorrhage occurring some time after the injury—from 12 hours to weeks or months (Tedeschi, 1945). It is not associated with hypertension or arteriosclerosis. After three weeks the haematoma is unlikely to be traumatic in origin. The relatively superficial clot can increase in size in a way comparable to subdural haematoma.

STUDIES ON PAIN

III: SOME OBSERVATIONS ON SURGICAL TREATMENT IN 65 CASES*

J. F. P. ERASMUS, M.Ch., M.D. (RAND)

Department of Surgery, University of Cape Town

Four earlier communications have dealt with various aspects of pain (1946, 1947, 1948, 1951). The present paper reports observations on 65 cases treated by various surgical procedures. All, except one case (No. 30) from

* The References will be published at the end of the concluding part of this paper.

the records of Mr. R. A. H. Krynauw, have been personally examined, but in some operation has been performed before such contact. In the latter case, only failures of treatment have been seen. This must be given due consideration in reading this report and for this reason the term 'elsewhere' is included in the tables, which sum-

marize the facts on which it is based. It goes almost without saying that, for the reason given, the over-all picture here reflected is far more pessimistic than it is in actual truth, and serves rather as a sombre background against which the brighter highlights of surgical endeavour stand out.

Again, this work is not a review but deals with what has been encountered in the writer's experience. It ignores the overwhelming majority of cases, where the correct surgical treatment of pain is the direct removal or rectification of its cause and deals only with those where, for one reason or another, interruption of various neuronal pathways has been undertaken. Various syndromes, such as true trigeminal neuralgia for example, are not included.

THE TYPES OF OPERATION

Technical details of procedures will not be described. The types of procedure here considered fall into three main groups:—

A. Interruption of afferent pathways, or correction of pathology affecting these;

B. Interruption of efferent pathways—sympathectomy;

C. Section of association pathways.

To forestall comment, it is reiterated that:

It is considered that acceptable evidence indicates that all afferent conduction of impulses giving rise to pain perception through a number of circuits that are activated at higher levels, is through the somatic sensory system. The autonomic system does not possess sensory fibres, or there is no convincing evidence that it does. Certain sensory nerves from the visceral territories do lie in association with the sympathetic chain, but are not relayed within it, and differ in no wise from afferent nerves from the musculo-skeletal, vascular and cutaneous structures. Interruption of these visceral afferents is for convenience included under sympathectomy where it belongs technically, but physiologically speaking should be included under interruption of afferent pathways. The rôle of the true sympathetic fibres in the mechanisms producing pain appears to be an efferent one producing some change in the environment of somatic nerve-endings (1948, 1951).

Freeman and others (1950) have raised the controversy of peripheral sympathetic afferents once again. By sympathectomy they abolished the response of contralateral reflex vasoconstriction to distention of the femoral vein with salicylate solution, and claim that the logical conclusion is that there are afferent fibres in the sympathetic chain, which enter the central nervous system by way of the peripheral sympathetic nerves and ganglionated paravertebral chain.

A. SECTION OF AFFERENT PATHWAYS, OR CORRECTION OF AN INVOLVEMENT OF THESE IN RECOGNIZABLE PATHOLOGY

OPERATIONS ON PERIPHERAL NERVES

These have included:

Section of nerve, sometimes with subsequent suture;

Neurolysis (freeing from scar);

Excision of neuroma.

The stump neuroma affords an excellent example of the effects of surgery on peripheral nerves. If the removal of such a neuroma once fails to bring relief, subsequent attacks thereon will never, or almost never, do any lasting

good (White, 1946). Experience shows that even nerve section will then very seldom be of benefit. Neurolysis, though theoretically sound, gives very poor results in general, even when well done. It should be realized that, if our concepts of the pain-cycle are true, section of nerve produces what has been termed an artificial synapse—autonomic impulses and effects, if they are operative in a particular case, will re-stimulate the new free nerve-ending at the point of section (Nathan, 1947).

It is well to recognize the thesis of this artificial synapse, for it may operate anywhere at the point of section of any afferent nerve fibres—it is the basis of many cases of the distressing syndrome of post-traumatic pain.

The present series affords 13 cases in which at least 16 operations of this type were performed (Table I). In only four instances did results appear satisfactory, but follow-up periods were 3 months, 3 months, 10 months, and 3 years—only the last being sufficiently long to substantiate any suggestion of cure. This case produced a particularly happy result, for a mass of adherent cauda equina had to be stripped free of dense adhesions following the operative removal of a prolapsed intervertebral disc.

Interruption of Posterior Nerve Roots. It is often possible to section the posterior nerve roots at a distance from the cause of pain, not so often advisable. Allowance is made for the overlap of sensory dermatomes and nerve roots sectioned above and below the dermatome to be denervated. It should be obvious that such a procedure must never be carried out in the sensory segments of the limbs, which will be rendered completely anaesthetic for all sensory modalities, a most crippling disability. Yet one has seen this done recently by an extremely capable surgeon, the patient thereafter had a useless upper limb and, to make matters worse, his pain was no scrap better (Case 6).

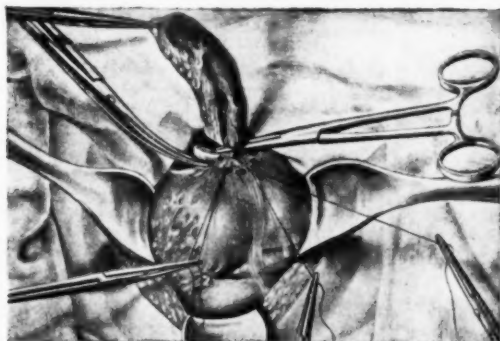
The injection of a solution of alcohol into the theca, and appropriate posturing of the patient to bring the solution in contact with the posterior nerve roots, serves a similar purpose and seems especially useful where expectation of life is particularly limited by virtue of advanced malignant disease.

Seven cases were encountered (Table II). The folly and tragic ineffectiveness of Case 6 has already been indicated. Case 13 was followed for only six months, but anything that gives relief for post-herpetic neuralgia for this time may well be permanent and even if not is still very much worthwhile. In Case 14, hydronephrosis developed subsequent to operation and raises an interesting question as to the rôle of nervous innervation in its causation. The tabulated record of the other three cases needs no comment, except to emphasize the heavy toll of untrained surgery in the treatment of prolapsed intervertebral disc (Case 16)—unfortunately others follow in the present series.

Siris and Kahn (1949) report on the efficacy of limited, interlaminar rhizotomy in the relief of two cases of peripheral vascular pain. On this report, Bailey (1949) comments: 'It is usually necessary to cut a large number of roots, and the resulting complete anaesthesia and liability to trophic disturbances have led to the preference of chordotomy.'

Chordotomy. Section of the spinothalamic tract is, to a surgeon trained in neurosurgery a minor operation, but unfortunately is often required in very ill patients. Despite

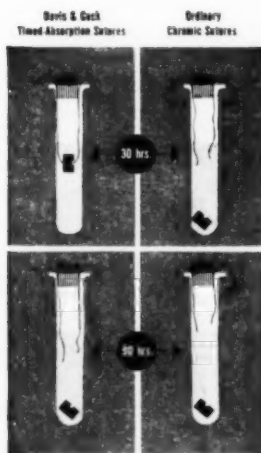
*During the
critical
first 4 days
depend on*



"TIMED-ABSORPTION" CATGUT

Because "timed-absorption" catgut (surgical gut) has a *measurable* and *predictable* rate of digestion, demonstrated by extensive tests, it remains intact until the wound has gathered support of its own. Because "timed-absorption" catgut does not digest prematurely, it assures strength when needed most — during the critical first 4 days following major surgery.

Processed by an exclusive Davis & Geck method embodying accurately graded degrees of tanning, "timed-absorption" catgut has an absorption curve that parallels the changing tissue conditions of healing. Resistance to digestion is maximal during *early* repair. Later, when artificial strength is no longer required, dissolution is rapid and complete and no remnants of gut remain.



Comparison of D & G "timed-absorption" medium chromic catgut, size 0, with ordinary medium chromic size 0 catgut. Both types of catgut are suspended in a trypsin solution and weighted. Note that at the end of 30 hours D & G "timed-absorption" catgut remains intact; the weight is still held suspended up to 90 hours. Contrast with an ordinary chromic catgut suture which has begun to digest and breaks under the slight tension created by the weight at 30 hours. In human tissue all chromic sutures are digested *more* slowly, but the ratio between the two types remains the same.

D & G catgut sutures have a special matte finish. They tie readily and do not slip at the knot. Pliability is exceptional and tensile strength, diameter for diameter, is guaranteed unexcelled by any other brand. No wonder so many surgeons agree on D & G.

There is a D & G suture for every surgical purpose. Available through responsible dealers everywhere.



DAVIS & GECK, INC.

57 WILLoughby St., BROOKLYN 1, N. Y.

SOLE IMPORTER

M. Stabler, Esq., M.P.S., Messrs. Chas. F. Thackray, (S.A.) (Pty.) Ltd.
301 Boston House, Strand Street
(P.O. Box 816) Cape Town

23 Orion House, 235 Bree Street
(P.O. Box 2726) Johannesburg

IN HOSPITAL AND GENERAL PRACTICE

*first
synthetic
antibiotic*

Chloromycetin



With the increased clinical evidence now accumulating, it is becoming obvious that the "spectrum of activity" of this remarkable antibiotic is wider than was at first anticipated.

Supplied in vials of 12 capsules of 0.25 gm.

It is now established that Chloromycetin is of definite value in:—

BACTERIAL AND VIRUS PNEUMONIAS
HERPES ZOSTER
INFANTILE GASTRO-ENTERITIS
SALMONELLOSIS
SURGICAL INFECTIONS
TYPHOID AND PARATYPHOID FEVERS
TYPHUS AND SCRUB TYPHUS
UNDULANT FEVER
URINARY INFECTIONS
WHOOPIING COUGH
TROPICAL ULCER AND YAWS
NON-SPECIFIC URETHRITIS

Clinical experience also suggests the use of Chloromycetin in: epididymitis, gonococcal infections, granuloma inguinale, infectious mononucleosis, influenzal meningitis, ornithosis, syphilis, trachoma.

PARKE, DAVIS & COMPANY, LIMITED



HOUNSLOW, near LONDON

Further information from any branch of LENNON LTD.



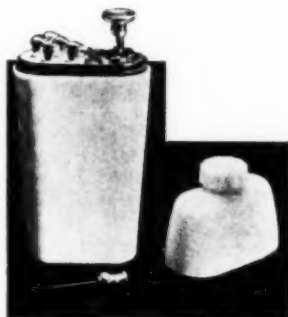
THE SPIRIT PROOF SYRINGE CASE

After extensive research and experiments, EVERETTS have now produced for you a truly spirit proof syringe case.

It is constructed of white thermo-setting plastic and is of pleasing design.

Is spill proof and fits into the pocket or bag.

Complete as illustrated with six assorted needles and a 1cc OR 2cc record syringe graduated as desired in either units or minims 25/-



STOCKED BY ALL RELIABLE SURGICAL INSTRUMENT DEPOTS

GURR SURGICAL INSTRUMENTS Pty. Ltd.

Harley Chambers, Kruis Street, P.O. Box 1562, Johannesburg.

TABLE I.—OPERATIONS ON PERIPHERAL NERVES

<i>Case</i>	<i>Cause of Pain</i>	<i>Operation</i>	<i>Result</i>
1	Trauma	Excision of neuroma	No benefit
2	Trauma	Excision of scar, neurolysis, skin graft	Satisfactory (10 months)
3	Trauma	Neurolysis and skin graft	Satisfactory (10 months)
4	Amputation	Excisions of neuroma (2) (both elsewhere)	Recurrence of pain
5	Trauma	Excision of neuroma, neurolysis and nerve suture (elsewhere)	No lasting relief
6	Trauma	Excision of neuroma, neurolysis (elsewhere)	No lasting relief
7	Amputation	Excision of neuroma, later section of brachial plexus (elsewhere)	No lasting relief
8	Amputation	Excision of neuroma (elsewhere)	No lasting relief
9	Trauma	Excisions of neuromas (2), neurolysis and nerve suture (all three operations elsewhere)	No relief
10	Trauma	1. Excision of neuroma, neurolysis and nerve suture with plasma and tantalum foil; 2. Excision of neuroma (1) [*] and nerve section	Short-lived relief Short-lived relief
11	Trauma—operative to cauda equina (elsewhere)	Neurolysis of cauda equina	Satisfactory (3 years)
12	Carcinoma invading orbit and base of skull	Trigeminal nerve section	Immediate relief of pain
65	Amputation	Numerous excisions of neuromas over 10 years (elsewhere)	No relief

^{*}(1) Second operation done as patient refused sympathectomy because he had noted a Horner's syndrome in a friend!

TABLE II.—INTERRUPTION OF POSTERIOR NERVE ROOTS

<i>Case</i>	<i>Cause of Pain</i>	<i>Operation</i>	<i>Result</i>
6*	Trauma	Posterior rhizotomy (elsewhere)	No relief
13	Post-herpetic	Posterior rhizotomy	Satisfactory (6 months)
14	Trauma—post-nephropathy (elsewhere)	Posterior rhizotomy	No lasting relief
15	Angina pectoris	Posterior rhizotomy (bilateral)	No post-operative pain, but died of coronary occlusion within 24 hours
16	Trauma to nerve roots—operative (elsewhere)	Posterior rhizotomy	Satisfactory (1 year)
17	Inoperable carcinoma of cervix uteri	Intrathecal alcohol	Satisfactory during short survival period
18	Inoperable carcinoma of cervix uteri	Intrathecal alcohol	Satisfactory during short survival period

In this and subsequent tables * indicates that more than one surgical procedure was undertaken

many expressions of opinion to the contrary, usually copied from others with no practical experience of the operation, there are no crippling disabilities after a properly executed section of the lateral spinothalamic tract. The bladder troubles usually last almost a fortnight or so and thereafter they vanish, provided the patient is instructed to empty the bladder at regular intervals, for the sensation of discomfort that attends distention is lost.

Again, the case must be properly selected. The operation should not be performed for pain due to an arthritic process, as the price may be a Charcot's joint. Although first introduced for the pains of *tabes dorsalis*, the operation is contra-indicated if the pain is, for one reason or another, attended with loss of posterior column sensation. In such an instance the remaining sensation in the affected limb is almost totally lost—a very great disability.

On entering the spinal cord through the posterior nerve root, sensory fibres divide into three groups. The

medial of these go to the posterior columns and mediate those qualities of sensation which we measure clinically by the appreciation of vibration and joint sense. The intermediate subserve light touch and are relayed to the ventral and lateral spinothalamic tracts of the opposite side of the cord. The lateral enter the tract of Lissauer in which they send collaterals upwards and downward over a few segments of the spinal cord. The vast majority, if not all, are linked with fibres that cross obliquely and establish contact with the lateral spinothalamic tract of the opposite side. The crossing may occupy up to some five spinal segments. It has been postulated that some fibres cross to the Lissauer tract of the opposite side, from which the crossing takes place once more across the cord, so that the ultimate conduction of impulses from one side may occur centrally along the lateral spinothalamic tracts of both sides (Wolff, 1948).

The quality of sensation carried by these last fibres is

TABLE III.—CHORDOTOMY

Case	Cause of Pain	Operation	Result	Follow-Up
4*	Amputation (elsewhere)	Bilateral chordotomy	Satisfactory	2 years
19	Removal of fibrolipoma (elsewhere)	Unilateral chordotomy	Transference of pain to opposite side	1 year
20*	Extension of carcinoma after pancreatic resection (elsewhere)	Bilateral chordotomy	Relief for 4 months then new pain from further extension of carcinoma	—
21	Inoperable uterine carcinoma	Bilateral chordotomy	Satisfactory	6 months (died of carcinoma)
22	Inoperable uterine carcinoma	Bilateral chordotomy	Satisfactory	1 month (still alive March 1951)
23	Inoperable recurrence of rectal carcinoma	Bilateral chordotomy	Satisfactory	5 months (died of carcinoma)
24	Vertebral metastasis from bronchial carcinoma	Bilateral chordotomy	Immediate relief but died of pneumonia 4 days after operation	—
25	Vertebral metastasis from ovarian carcinoma	Bilateral chordotomy	Relief until death from pulmonary embolism 4 weeks after operation (1)	—
26	Bullet wound involving lumbar segment of spine	Bilateral chordotomy	Satisfactory	2 years
27	Infection round cauda equina following operation for spondylololiosis (elsewhere)	Bilateral chordotomy	Unsatisfactory from start	1 year
28	Uncontrollable diabetes with severe pain in legs	Bilateral chordotomy	Relief of pain—wound disruption	2 months (died in diabetic coma)
29	Trauma to cauda equina at operation for removal of prolapsed intervertebral disc (elsewhere)	Bilateral chordotomy	Relief of pain; severe root pain for some months	4 years
30	Trauma to cauda equina at operation for removal of prolapsed intervertebral disc (elsewhere)	Bilateral chordotomy	Relief of pain; severe root pain for some months	1 year

measured clinically by response to pin-prick and heat; the lateral spinothalamic tract thus carries the modalities of pain, temperature, and half those of light touch in a recognizable somatotopical arrangement. The identification of fibres carrying pain with those mediating the appreciation of pin-prick is built up on the work of the experimental physiologists, who concerned themselves so largely with cutaneous sensibility. It is debatable whether the pain of the physiologists conforms with that of the suffering patient, whether pain is in fact a specific sensory modality or a perversion, or undue manifestation of any severe and continued battery of impulses impinging through various neuronal pathways or circuits upon the sensorium.

In view of these anatomical facts the operation must be undertaken at a considerable level above the site of the pain. It is almost invariably performed at the eighth cervical or first thoracic neurological segments. Even this cannot be expected to relieve pain that extends above the general level of the xiphisternum (Case 20, Tables III and VI). In addition, if the conception of a bilateral conduction of spinothalamic sensation is correct, many disappointments are to be expected from unilateral tractotomy (Case 19).

From Table III it will be seen that chordotomy has been used in 13 cases in the series. Seven of these were gravely ill patients with very poor general condition, six were doomed by advanced malignancy, one of these had already had in addition four episodes suggesting pulmonary embolism over the preceding few months (Case 25). The seventh was referred in desperation by the Groote Schuur Hospital Diabetic Clinic, where his diabetes could not be controlled nor his severe pain relieved (Case 28). In such desperate cases death concludes the follow-up in any case, but chordotomy still provides the surest method of pain relief, in properly selected instances. In all cases pain relief was complete until such time as further extension of malignancy placed it above the anatomical level amenable to the procedure (Case 20).

Some root pain, referred from the level of the section is inevitable, but in all instances, except Case 29, this disappeared within 14 days. In Cases 4, 20, 21, 22, 23, it was only discovered on direct questioning and disappeared in from 48 hours to 7 days. Exposed

posterior nerve roots were cut with a view to avoiding this pain only in Case 4.

White (1950) reports relief from pain in 73-88% of patients with abdominal or pelvic malignancy. He mentions 'cross-over' pain in abdominal disease after unilateral incision. He also stresses the lack of real disability following even more extensive spinothalamic tractotomy than carried out in the present series.

Mesencephalic Tractotomy. Medullary tractotomy has not been used for fear of death from oedema involving vital centres. Mesencephalic tractotomy has been used for pain involving shoulder, neck and side of face, and even lower neurological levels. The brachium of the inferior colliculus is sectioned, thus cutting the spinothalamic fibres before they enter the thalamus. The exposure of the required field entails considerable retraction on the occipital lobe, which may explain the homonymous hemianopia that attends the relief of pain. This is no disability, however, and despite the relative magnitude of this operation it is well worthwhile in really distressing cases of pain.

TABLE IV.—MESENCEPHALIC TRACTOTOMY

Case	Cause of Pain	Result
7*	Amputation	Relief of pain for 6 months (then death from unrelated cause)
31	Carcinoma of tongue and floor of mouth	Relief of pain (6 months)

This operation has been observed in two instances only (Table IV). Case 7 was that of a lady over 70 years, who had received many forms of unavailing therapy for severe pain in the neck, shoulder, stump and side of chest following an amputation below the shoulder joint 10 years previously. This was the first procedure to give relief for more than a few weeks. The second, with extensive local malignancy, was followed for six months (Case 31).

(To be concluded)

PASSING EVENTS

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a Quarterly Meeting of the College held on 1 May, Sir David K. Henderson in the Chair, the following were elected Fellows of the College:

Alan Percy Agnew, M.B. (Glasg.).
Thomas Semple, M.D. (Glasg.).
Richard White Bernard Ellis, O.B.E., M.A., M.D. (Canada), F.R.C.P. (Lond.).

The following were elected Members of the College:

Alexander Kahan, M.D. (Lond.).
Kahan Chand Kandhari, B.Sc., M.B. (Punjab).
Kurt Aaron, M.D. (Frankfurt), L.R.C.P. (T.Q.).
Ali Mohammad, M.B. (Punjab).
Declan Rene Barry, M.D. (Paris), L.R.C.P. (T.Q.).
Odhavji Tribhovandas Samani, M.B. (Bomb.), M.B. (Lond.).
James Donald Robertson, M.B. (Edin.).
Paul Wynne Wishart, M.B. (N.Z.).
Kenneth Gordon Lowe, M.D. (St. And.).
Abdul Kalam Siddiqui, M.B. (Osmania).
Muriel Margaret McLean, M.B. (Aberd.).

Claude Marcus Beresford Field, M.D. (Belf.).
Charles Dargaville Thomson MacLean, M.B. (Glasg.).
Bruce Cooper Sinclair-Smith, M.B. (Syd.).
William James Bell, M.B. (Edin.).
Alexander Stuart Douglas, B.Sc., M.B. (Glasg.), M.R.C.P. (Lond.).
James Hingston, M.D. (N.U.I.), M.R.C.P.I.
James Fyfe Crockett Waterston, M.B. (Edin.).
Keith Barrington Forbes Witcombe, M.B. (N.Z.).
Durgadas Banerjee, M.B. (Calc.).
Narendar Paul Bector, M.B. (Punjab), M.R.C.P.I.
George Selby, M.B. (Syd.).
Hector John Stott, L.R.C.P. (T.Q.).
Hugh Wilkes Macintyre, M.B. (Lond.).
Arthur Saravanamuthu Thambiah, M.B. (Madras).
Madan Mohan Pradhan, M.B. (Madras).
Michael Francis Oliver, M.B. (Edin.).

Prof. R. H. Goetz of the Department of Surgical Research, University of Cape Town, has been elected a member of the Executive Committee of the International Society of Angiology.



Dr. James T. Louw

Dr. James T. Louw, of Cape Town, has been appointed to the Chair of Obstetrics and Gynaecology, University of Cape Town.

Professor Louw assumed duties on 1 September 1951.

We regret to record the death of Dr. J. A. Lloyd, former district surgeon of Dundee, Natal, from 1910 to 1944.

Dr. Bernard M. Jacobson, M.B. (Wits.), M.R.C.P. (Edin.), D.M.R. (London), has returned from overseas where he completed his post-graduate studies and has now joined Drs. Greenwood, Theron and Samuel in radiological practice at 1-6 Lister Building, 195 Jeppe Street, Johannesburg.

Dr. H. van Lingen, of the Department of Medicine, University of the Witwatersrand, Johannesburg, has been appointed by the Selection Committee of the Cape Town Post-Graduate Medical Association as the first Eli Lilly Medical Research Fellow (South Africa).

Dr. van Lingen will proceed to the United States in October and will be away for one year.

Dr. T. Coetzee of Cape Town left on 13 September 1951 for post-graduate study at the University of Utrecht, Holland.

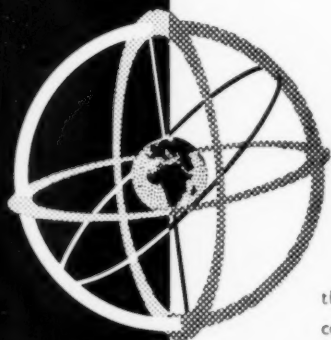
Dr. Coetzee will be away for about two years.

JAN CHRISTIAAN SMITS: HIS LIFE AND CHARACTER

There have been numerous inquiries from doctors as to where this book can be obtained. Please address your requirements to Mr. Dirk du Plooy, P.O. Box 38, Hopetown, Cape Province. The price is £1 per book, post free. Juta & Company also stock this book.



The scene in the Central Hall, Westminster, London, when Dr. A. W. S. Sichel was delivering his presidential address to the Adjourned Annual General Meeting of the British Medical Association on 15 June 1951.



TIME

has confirmed

the superiority of natural oestrogens. Safe and consistently non-toxic in therapeutic doses they may be prescribed or administered with the confident knowledge that they will never produce unpleasant side reactions.

PROFOLIOL[®] preparations

CHEMICALLY IDENTICAL WITH
PROGYNON BRAND

are foremost amongst natural follicular hormone derivatives, unique in smoothing the course of the menopause and produce a sense of well-being.

PROFOLIOL-B and PROFOLIOL-DP for intramuscular injection.

PROFOLIOL-DH for oral therapy and topical application.



Schering

CORPORATION, BLOOMFIELD, N.J., U.S.A

Sole Distributors :

SCHERAG (PTY.) LTD. P.O. BOX 7539, JOHANNESBURG.

REPAIR TO HAND

Fixation with Elastoplast

A Battle Casualty with considerable destruction of the palm of the hand, the little finger and the fifth metacarpal joint. Skin grafting was carried out as a preliminary measure to produce a healed surface. Later there was excision of graft and scar tissue with application of a direct flap from the back. Fixation was secured with Elastoplast prior to division of the base of the flap.

The details and illustrations above are of an actual case. T. J. Smith & Nephew, Ltd., of Hull, England, manufacturers of Elastoplast, publish this instance—typical of many—in which their products have been used with success.



Fig. 1



Fig. 2



Fig. 3

Fig. 1—
Condition on admission.

Fig. 2—
After excision of graft and
scar tissue. Application of
direct flap from the back.
Note fixation.

Fig. 3—
Flap in position. Full ex-
tension of fingers.

Fig. 4—
Formation of fist.


Fig. 4

ENQUIRIES:
SMITH & NEPHEW (PTY.), LTD., BOX 2347, DURBAN.

BOOKS

TO RESIDENTS IN SOUTH AFRICA

LEWIS'S CAN SUPPLY THE PUBLICATIONS OF ALL PUBLISHERS. LARGE STOCKS OF TEXTBOOKS AND RECENT LITERATURE IN ALL BRANCHES OF MEDICINE AND SURGERY, ENGLISH AND FOREIGN.

COMMONWEALTH LIBRARIES, COLLEGES AND SIMILAR INSTITUTIONS RECEIVE CAREFUL ATTENTION TO ORDERS AND ENQUIRIES.

SECOND-HAND DEPARTMENT

140, GOWER STREET, LONDON, W.C.1

Large Stock of Second-Hand Recent Editions at Reduced Prices. Old and Rare Medical Works. Sets of Medical Journals.

H. K. LEWIS & Co. Ltd.
136, Gower Street, London, W.C.1

Cables : Publicavit : Westcent : London.

ANÆSTHETIC ETHER

Manufactured by

THE NATAL CANE BY-PRODUCTS LTD.
OF MEREBANK

● Guaranteed to conform to the requirements of the 1948 British Pharmacopœia and the Specification of the South African Bureau of Standards. Equal to the finest imported Ether.

● In cases, each containing 12 x 1 lb. Amber Coloured Bottles, similar to those used in Europe.

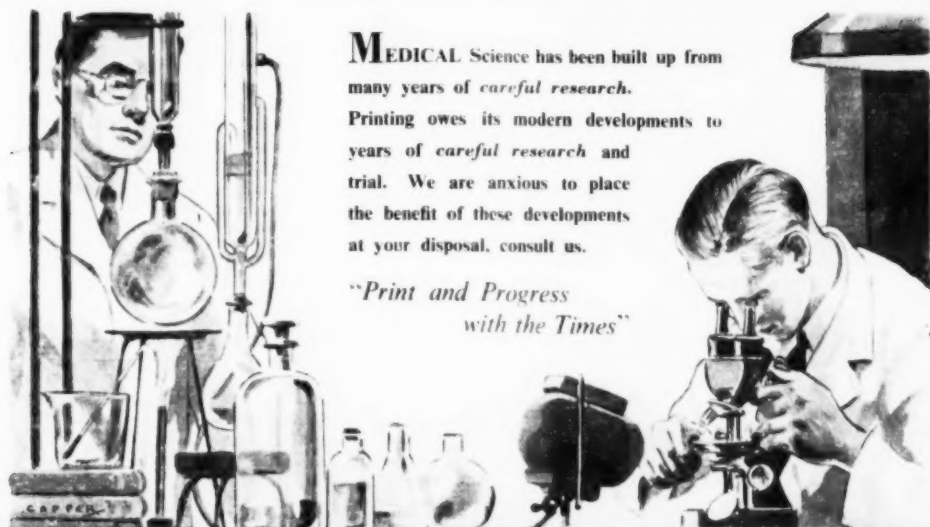
For further information please write to the selling Agents

C. G. SMITH & CO. LTD.
301 Smith Street, P.O. Box 43, Durban

Bert Mendelsohn (Pty.) Ltd.,
P.O. Box 565, Johannesburg.

C. G. Smith & Co., Ltd.,
P.O. Box 1314, Cape Town.

Courlandiers' Agencies,
P.O. Box 352, East London.



MEDICAL Science has been built up from many years of careful research. Printing owes its modern developments to years of careful research and trial. We are anxious to place the benefit of these developments at your disposal, consult us.

*"Print and Progress
with the Times"*

JOHANNESBURG

221 Loveday House, Marshall St.
P.O. Box 3621. Phone 33-1176**CAPE TIMES LIMITED**

CAPE TOWN

Sales Office: St. George's St. P.O. Box 11 Phone 2-9631

PORT ELIZABETH

South-West House, 100 Main St.
P.O. Box 744 Phone 11-3818

You have the

Speed

you need with this

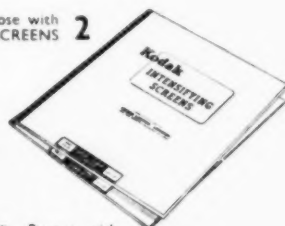
RADIOGRAPHIC RULE OF THREE

The SPEED you need is yours when film, screens, and chemicals bear the Kodak label. Then, because these products are made to work together, the radiographer is assured the utmost in speed in every step, from initial exposure to final processing . . . and the maximum diagnostic value.

KODAK PRODUCTS FOR RADIOGRAPHY

Blue Brand and 'Kodirex' X-ray Films . . . 'Fluorodak' and 'Fluoropan' Films for mass miniature radiography . . . High Definition and Ultra Speed X-ray Intensifying Screens . . . Exposure Holders . . . X-ray Developers, Developer-Replenishers and Fixers . . . Processing Units and Drying Cabinets . . . Safelight Lamps . . . Hangers, Thermometers . . . Film Corner Cutters . . . Illuminators.

KODAK (South Africa) Limited

Use 'KODAK'
X-RAY FILM 1Expose with
'KODAK' SCREENS 23 Process with
'KODAK' CHEMICALS

CAPE TOWN - JOHANNESBURG - DURBAN

'KODAK' is a registered trade mark

Instructions to Authors

All authors are advised to consult *Medical Writing*, by Dr. M. Fishbein, formerly Editor of the *Journal of the American Medical Association*. The volume is obtainable from medical libraries in South Africa. It is published by the Blakiston Co., Philadelphia, U.S.A.

Papers submitted for publication in this *Journal* are accepted on condition that they have not been published elsewhere. The *Journal* Management reserves the copyright of all material published.

Considerable delay in the publication of papers is often due to the fact that they are poorly prepared. Publication will be expedited if the following specifications are complied with:—

1. All copy should be typewritten (double or preferably triple spaced) with wide margins.

2. Tables, references, graphs, illustrations and legends for illustrations should be clearly identified and prepared on separate sheets.

3. All photographs should be glossy prints unmounted, untrimmed and unmarked. Authors' suggestions for trimming, etc., are most suitably indicated on a duplicate print or diagram.

4. In no circumstances should original X-ray films be forwarded. Glossy prints must be submitted.

5. Line drawings should be on white board, arranged to conserve vertical space. All lettering in diagrams and graphs should be indicated clearly in soft lead pencil, preferably on a duplicate specimen or diagram in rough. In no circumstances should lettering be inked in or typewritten on the figure or the graph. Illustrations should not exceed 12 inches x 18 inches in size.

6. Figure numbers should be marked clearly on the back of each illustration, and in every case the top of the illustration should be indicated.

7. A limited but reasonable amount of illustrative and tabular matter is allowed free. Additional material of this sort may be allowed at cost, at the discretion of the Editor.

8. All references to the literature should be inserted in the text as a superior number and listed at the end of the article in numerical order.

9. References must conform to the following convention (journal titles being abbreviated according to the *World List of Scientific Periodicals*):—

White, J. and Brown, A. B. (1946): *Arch. Clin. Med.*, **123**, 167.

Books should be cited as follows:—

Smith, J. (1946): *An Introduction to Medicine*, 2nd ed., p. 174. Cape Town: John Black, Ltd.

10. Numerals up to and including nine to be spelt out fully, except in fractions, times, weights and measures, and in tabular matter.

All numerals *always* to be spelt out in full at the beginning of a sentence.

11. Cubic centimetre as c.c.; Cubic millimetre as c.mm.; 7.11.46 as 7 November 1946; 2nd as second; 10/6 as 10s. 6d.; Per cent. as %; 1" as 1 inch; B.P. 140/80 as Blood pressure, 140/80 mm. Hg.

12. Each paper should conclude with a summary (of about 200 words) intelligible apart from reference to the main text of the article.

13a. Galley proofs will be forwarded to the author in good time before publication date.

13b. Corrections, other than typographical errors, will be charged to the author. It is therefore most important that the MS. be submitted in its final form.

14. Reprints: An order blank for reprints, together with a price list, will be sent to the author as soon as his article reaches page-proof stage.

15. All manuscripts and correspondence should be addressed to: The Editor, *The South African Medical Journal*, P.O. Box 643, Cape Town.

S.A. Medical Journal

S.A. Tydskrif vir Geneeskunde

The *Journal* is published weekly on Saturdays.

Office: Medical House, 35 Wale Street, Cape Town.

Postal Address: P.O. Box 643, Cape Town. Telephone 2-6177.

Telegrams: *Medical*, Cape Town.

Proprietors and Publishers: Medical Association of South Africa.

The *Journal* is supplied to all members whose names are furnished by the Branch Secretaries.

Subscription for non-members, 63s. per annum, post free, payable in advance, can be commenced at any time. Single copies, 2s.

Advertisement rates for domestic events, 5s. per insertion, repeats at half-price; other small single insertions, 25s. per inch, single column. Quotations for larger and serial advertisements on application. Copy must reach the Advertising Manager at least 21 days before publication.

All remittances, whether for subscriptions or advertisements, are payable to the Medical Association of South Africa, at the above address. Cheques should include exchange.

Author's reprints of papers can be obtained at cost. Order blanks will be forwarded to authors when page proofs are ready.

Please Remember



Your Association's

Benevolent Fund

Contributions

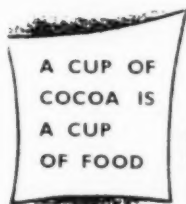
which will be gratefully received

may be sent to

The Honorary Treasurer

Medical Association of South Africa

P.O. Box 643 · Cape Town



Children will drink milk
if it is made into a cup of
Bournville Cocoa.



Cadbury's



BOURNVILLE COCOA

**KLIM is full-cream
milk in powdered form —
SAFE, PURE and ALWAYS
DEPENDABLE**



FIRST
IN PREFERENCE
THE WORLD OVER

THE BORDEN COMPANY (South Africa) (Pty.) Limited
Argus House, 63 Burg Street, Cape Town

KPMJ

The Medical Association of South Africa Die Mediese Vereniging van Suid-Afrika

AGENCY DEPARTMENT : AGENTSAP AFDELING

KAAPSTAD : CAPE TOWN

Posbus 643, Telefoon 2-6177 : P.O. Box 643, Telephone 2-6177

PRAKTYKE TE KOOP : PRACTICES FOR SALE

(350) Eastern Cape hospital town. Total gross receipts for preceding 13 months £3,700. One appointment. Premium of £2,000 includes drugs, surgery furniture, fittings, etc. House for sale at £3,000. Large bond available. £700 rebate if appointment not transferred. Practice offers great scope for practitioner with surgical ability.

(644) Durban Central. Mainly Indian and Native cash practice. Average annual gross income £1,235. Premium of £500 required for goodwill, inclusive of furniture and fittings and drugs. Terms may be arranged.

(805) Transkei Native and D.S. practice. Near large town. House and surgery for sale, purchaser preferably bilingual.

ASSISTENTE PLAASVERVANGERS VERLANG ASSISTANTS LOCUMS REQUIRED

(689) Zululand Mission Hospital with 60 beds. Locum tenens, man or woman, for 12 to 18 months. Travelling expenses paid and furnished house available. Salary to be discussed.

(778) Noord-Kaapland. Hospitaalorp. So spoedig moontlik vir een maand. £2 2s. p.d. plus inwoning en reiskoste. Kar word voorsien. Moontlikheid om aan te bly as assistent.

(795) Western Province town. From 30 October for 3 weeks as locum for assistant in G.P. Salary £2 2s. p.d. plus board and lodging. Car not essential.

(809) Gentle assistant for Transkei general practice with D.S. appointment. Single man preferred. Excellent opportunity to gain sound experience. Salary to be arranged.

(804) Westelike Provinsie. Vanaf 11 tot 25 Oktober. Minimum salaris £2 2s. p.d. plus losies. Kar word verskaf.

ASSISTENTE PLAASVERVANGERS BESKIKBAAR ASSISTANTS/LOCUMS AVAILABLE

(784) Lady doctor qualified Univ. C.T. 1944, additional experience Paediatrics, available as locum, assistant or Junior Partner in Port Elizabeth.

JOHANNESBURG

Medical House, 5 Esselen Street. Telephones 44-9134-5, 44-0817
Mediese Huis, Esselenstraat 5. Telefoon 44-9134-5, 44-0817

PRAKTYKE TE KOOP : PRACTICES FOR SALE

(Pr S30) Johannesburg Partnership practice plus Solus practice. Mainly non-European. Present income £3,600 p.a. Premium for quick sale £1,250.

(Pr S31) O.V.S.-praktyk. Goeie geleentheid vir algemene geneesheer met aanleg vir snywerk. Alle fasiliteite. Medisyne word aangemaak. Moet tweetalig wees. Jaarlikse inkomste £2,400. Eienaar gaan verder studeer. Premie vir klandiesie-waarde, instrumente en voorrade, £1,500. Een maand introduksie sal gegee word.

MEDICAL EQUIPMENT

(I 017) Leitz microscope £45.

(I 018) What offers? Complete set *British Encyclopaedia of Medical Practice* plus all editions of *Medical Progress* to 1950. Condition as new.

(I 019) Zeiss microscope. Condition as new. £55.

(I 020) 'Standby' model Baumanometer. £10.

(I 021) Portable Baumanometer. £3.

(I 022) Klinostik Auroscope with Ophthalmoscopic attachment. £3.

(I 023) Heavy based Irrigator stand, height adjustable, complete with glass flask and hook to carry vacolitre flasks. £7.

South African Railways and Harbours Sick Fund

APPOINTMENT OF RAILWAY MEDICAL OFFICER: BRENTWOOD PARK

Applications are invited from registered medical practitioners for the position of Railway Medical Officer, Brentwood Park, including Benoni East and North Agricultural Holdings, Benoni Small Farms, Rynfield Agricultural Holdings, van Ryn Agricultural Holdings, Seafontein, Puffontein, Lilyvale, Petit, Varkfontein and Fairlead Agricultural Holdings, at a salary of £418 per annum, plus the fees and allowances prescribed by the Regulations of the Sick Fund, and with the right of private practice.

The salary will be subject to adjustment in accordance with the census of members to be taken on 1 April of each year.

The appointment will be made in terms of the Regulations of the Fund, and will be subject to termination on four months' notice being given by either side.

The successful applicant will be required to reside in the medical district, to take up the appointment on a date to be arranged, and to carry out his duties in accordance with the Regulations of the Fund.

Applications should reach the District Secretary, Western Transvaal District Sick Fund Board, Room 342, Third Floor, New Station Buildings, Johannesburg, not later than 24 October 1951, and should state:

1. Full name.
2. Qualifications (when and where obtained).
3. Experience (when and where obtained).
4. Date of birth.
5. Country of birth.
6. Whether married or single.
7. Whether fully bilingual.
8. Whether South African citizen.
9. What Government appointment, if any, is held.

Canvassing by or on behalf of any applicant is liable to disqualify such applicant.

Any further particulars may be obtained from the District Secretary at the above address, on application.

P. J. Klem

Johannesburg

29 September 1951

General Secretary
(08)

Vakature vir Mediese Beampte

Die aandig word gevestig op 'n advertensie in die *Staatskoerant* van 14 September 1951, waarby aansoek om aanstelling gevra word, op kontrak, in 'n vakante pos van Mediese Beampte in die personeel van die Gesondheidsinstituut vir Gesin en Sameslewing, Clairwood, Durban.

Die salarisskaal aan die pos verbonde, is £720-30-900-40 (£1,020, plus 'n lewenskostetoelae van £256 per jaar in die geval van getroude en £80 per jaar in die geval van ongehoude amptenare).

Aansoekvorms is verkrygbaar van die Sekretaris van Gesondheid, Posbus 386, Pretoria. (30872)

For Sale

Operating Theatre equipment, Surgical instruments Birtcher's, Seimen's, and Stanley Cox Surgical and Medical Diathermy's with all accessories, X-ray plant, etc. Write 'A. I. E.', P.O. Box 643, Cape Town.

For Sale

One Kilmistik Diagnostic set and one doctor's bag. For further information write to the Local Agency Manager, Medical Association of South Africa, 112 Medical Centre, Field Street, Durban.

For Sale

X-ray equipment, 17-75 Victor Radiographic and Fluoroscopic unit with accessories. Write to 'A. I. E.', P.O. Box 643, Cape Town.

City of Cape Town

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

Applications are invited from registered medical practitioners under 45 years of age for the position of Medical Officer of Health to the City of Cape Town.

The possession of a Diploma in Public Health or State Medicine is essential, and previous experience in the following will be regarded as an advantage:

- Public health administration.
- Tuberculosis.
- Maternal and child welfare.
- Veneral diseases.
- Hospital administration.
- Diagnosis of infectious and formidable epidemic diseases.
- Modern methods of milk control.

The salary will be at the rate of £2,160 per annum in Grade 154, scale £2,160-60-£2,520, plus temporary cost-of-living allowance. The successful applicant will be required to devote the whole of his time to the duties of Medical Officer of Health of the city.

The appointment will be subject to the provisions of the Public Health Act No. 36 of 1919 and of the Cape Municipal Ordinance No. 10 of 1912, to the Standing Orders of the Council, and to the Municipal Staff Code, all as amended from time to time.

The successful applicant will be required to enter into a contract of service with the Council.

A statement of the duties and conditions attached to the appointment will be forwarded on application, and all candidates are required to acquaint themselves therewith.

Applications in duplicate on the prescribed forms obtainable from the undersigned, together with copies of three recent testimonials should reach him not later than noon on 15 October 1951.

H. M. Sheldon

Senior Staff Officer
T.C. 7115

NOTICE NO. 27 OF 1951

Municipality of Koster

VACANCY: MEDICAL OFFICER OF HEALTH (PART-TIME)

Applications for the above position are hereby invited at a remuneration of £60 per annum.

The successful applicant will be required to enter into an agreement with the Council, a draft copy of which will be open for inspection at the Municipal Offices.

Applications must reach the undersigned not later than 4 p.m. on Friday, 5 October 1951.

C. P. Fourie

Koster

10 September 1951

Town Clerk
S 4

KENNISGEWING NO. 27 VAN 1951

Munisipaliteit van Koster

VAKATURE: GENEESKUNDIGE GESONDHEIDSBEAMPTTE (DEELTYDS)

Aansoek word hiermee gevra om die bovermelde betrekking teen 'n toelae van £60 per jaar.

'n Behoorlike kontrak waarvan 'n konsep afskrif vir insae lê by die Munisipale Kantore, sal moet aangegaan word met die Raad.

Aansoek moet die ondergetekende bereik nie later dan 4-uur n.m. op Vrydag, 5 Oktober 1951, nie.

C. P. Fourie

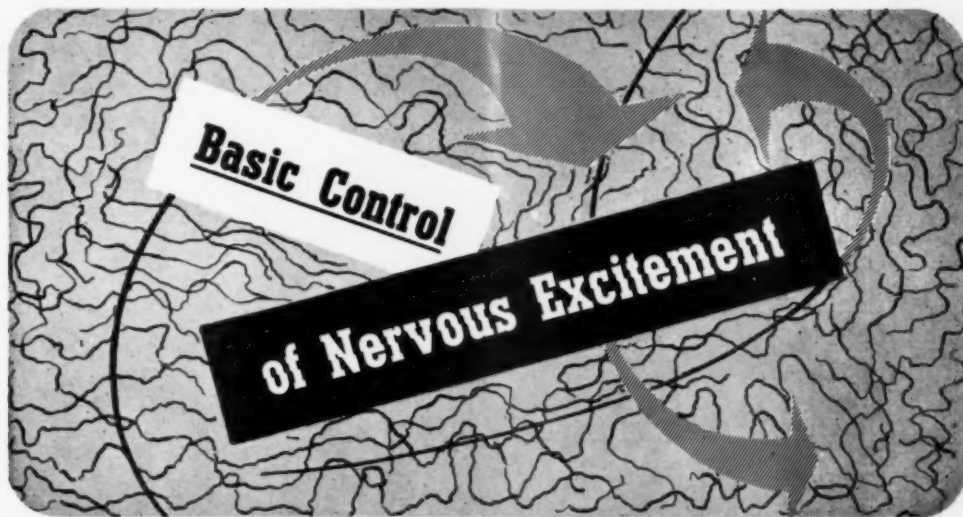
Koster

10 September 1951

Stadsleier
S 4

To let

Department and showroom accommodation for medical products, and a doctor's suite, in a new building in Cape Road. For further particulars write to P.O. Box 155, Port Elizabeth.



PARENTERAL administration of Luminal promptly tones down nervous system excitement. Whether manifested as convulsions, psychic agitation or pernicious vomiting, nervous overactivity is controlled profoundly and for prolonged periods with Luminal in adult doses of from $\frac{1}{4}$ to 3 grains.

By prescribing Luminal, certainty of therapeutic result and accurate dosage is assured. For, when Luminal is specified in your prescription there is no valid excuse for the substitution of something else. Hundreds of published clinical reports testify to its therapeutic efficiency. Your preference for the pioneer brand of phenobarbitone is therefore well-founded.

LUMINAL

The pioneer brand of phenobarbitone

BACKED BY MORE THAN 30 YEARS OF EXPERIENCE



Winthrop Products
(PTY.) LTD.

Box 4186
CAPE TOWN

Box 9536
JOHANNESBURG

Box 2461
DURBAN

new
Sucaryl
 TRADE MARK
SODIUM
 (CYCLAMATE SODIUM, ABBOTT)



SUCARYL SODIUM has these advantages over Saccharin:—

1. It has no bitter after-taste if used moderately and is, therefore, especially palatable in hot drinks, such as coffee or tea, and in iced drinks.
2. It may be used in cooking and baking foods—such as fruits, pastries, etc., since it is not decomposed by the heat necessary for their preparation or by boiling in solution.



A stable, synthetic sweetening agent with no caloric value. For use in diabetic, reducing or other diets in which sugar is forbidden or the amount limited.



SUCARYL SODIUM 1-Gm. tablets (each equivalent to 1 teaspoonful of sugar) are available in bottles of 100 tablets—List 3889.



Now Available From:—

ABBOTT LABORATORIES S.A. (Pty.) Ltd.

JOHANNESBURG • CAPE TOWN • DURBAN